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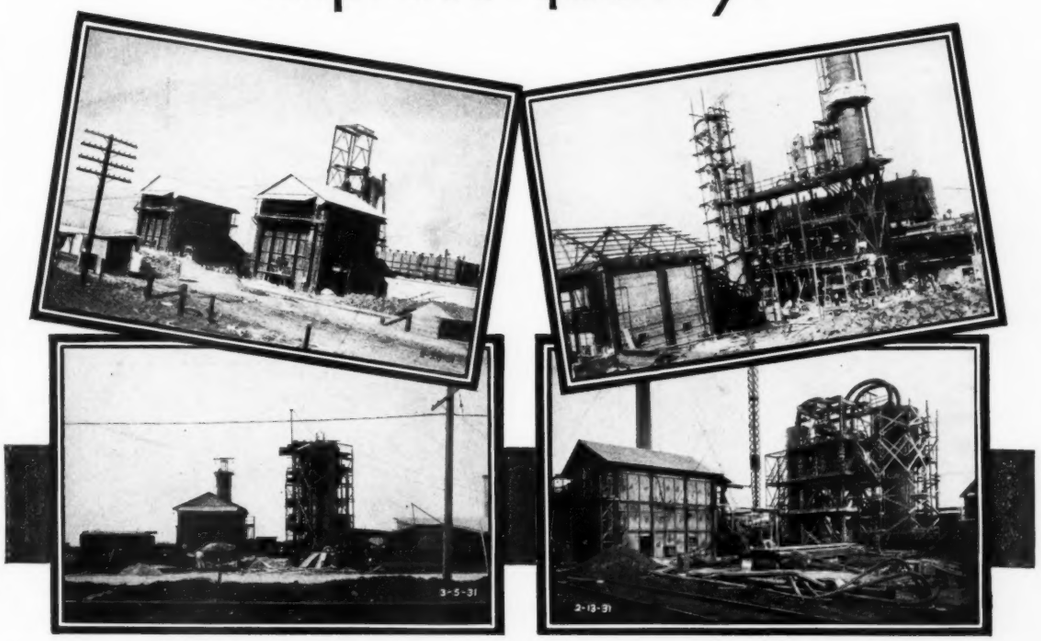

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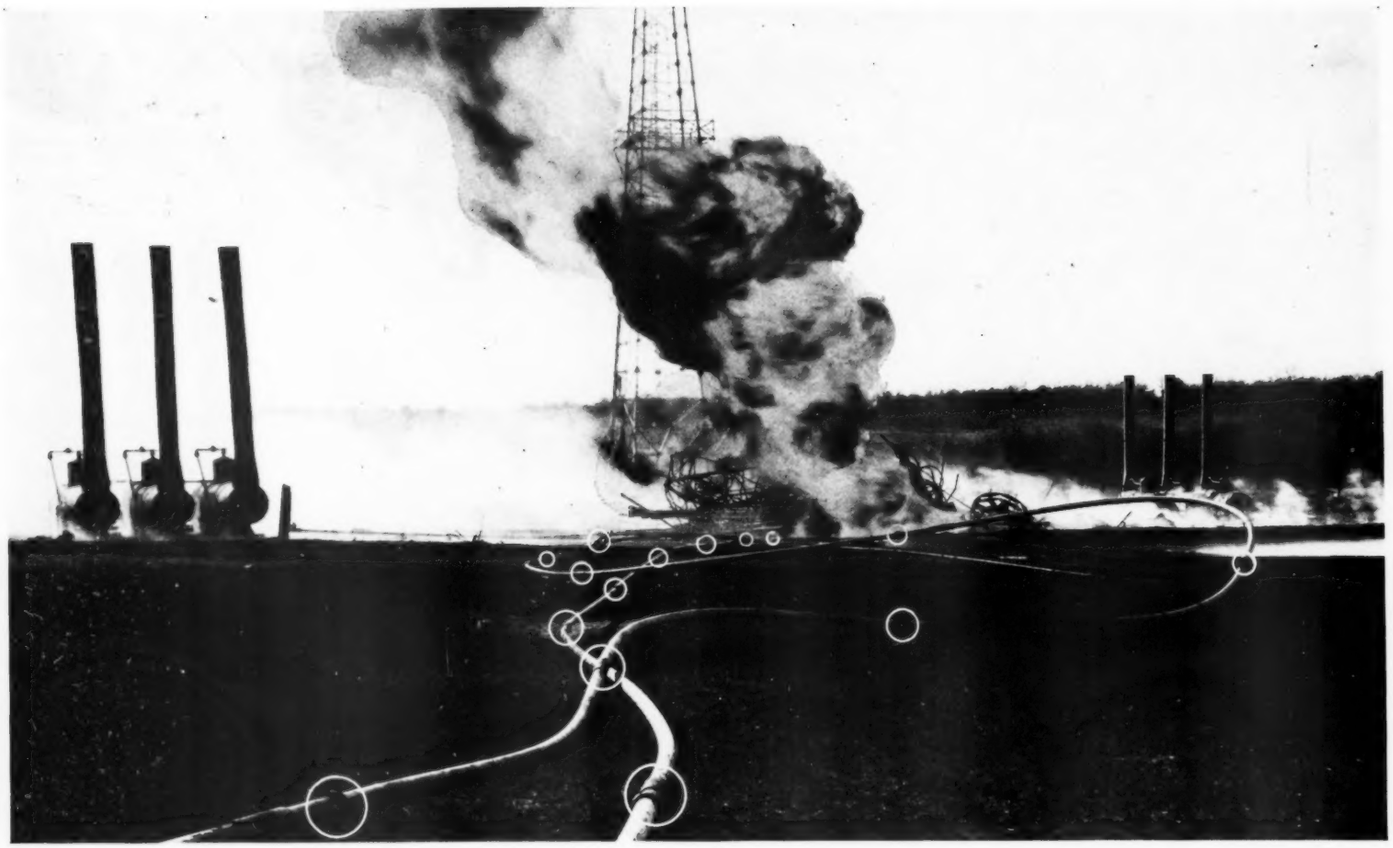

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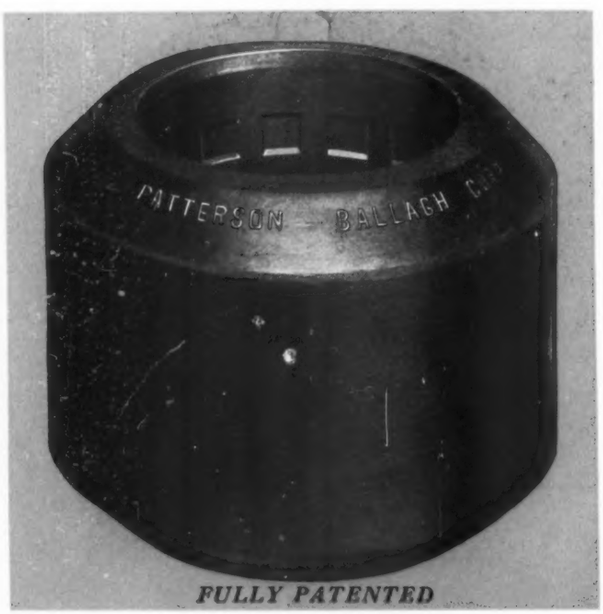

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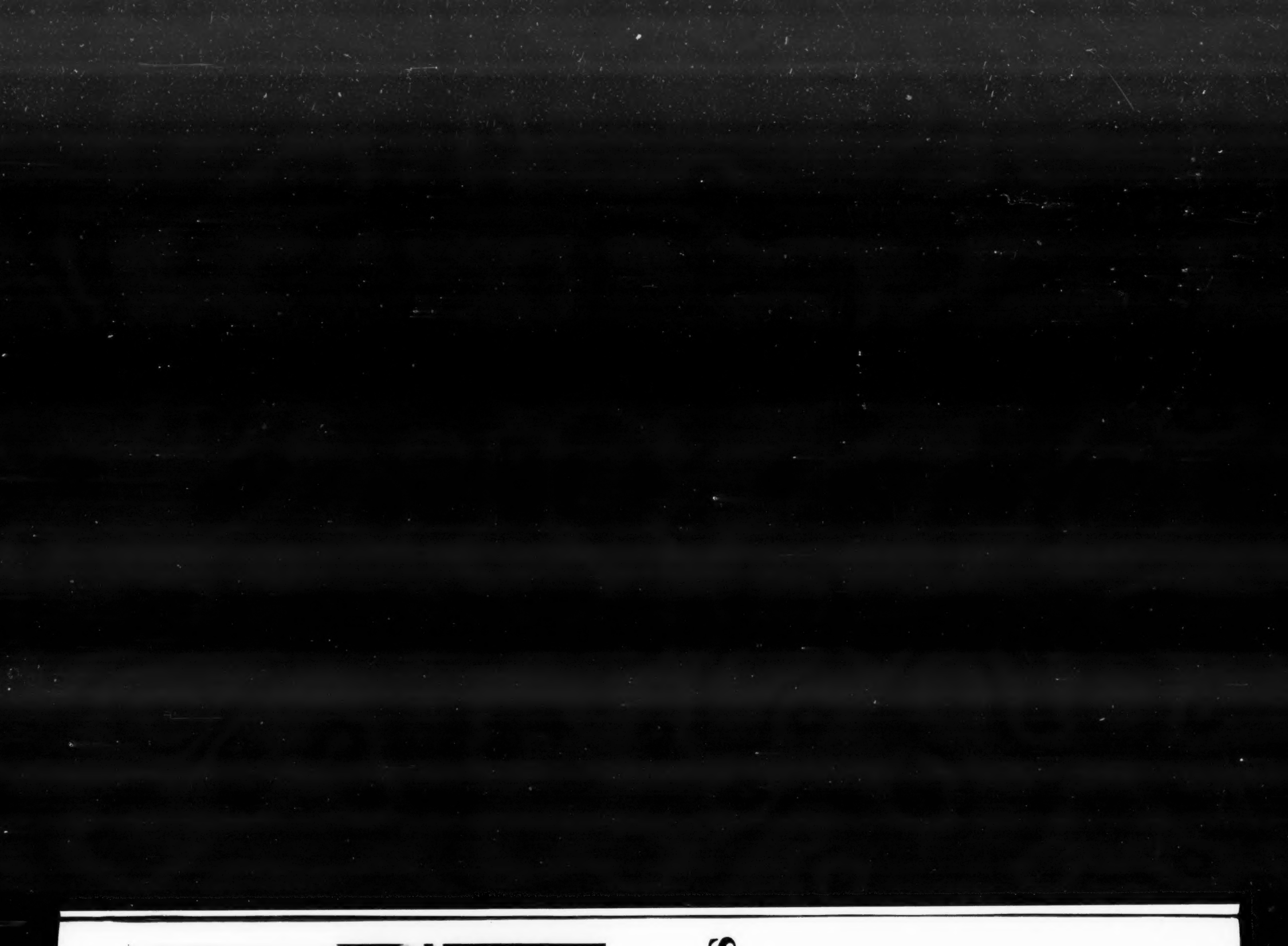

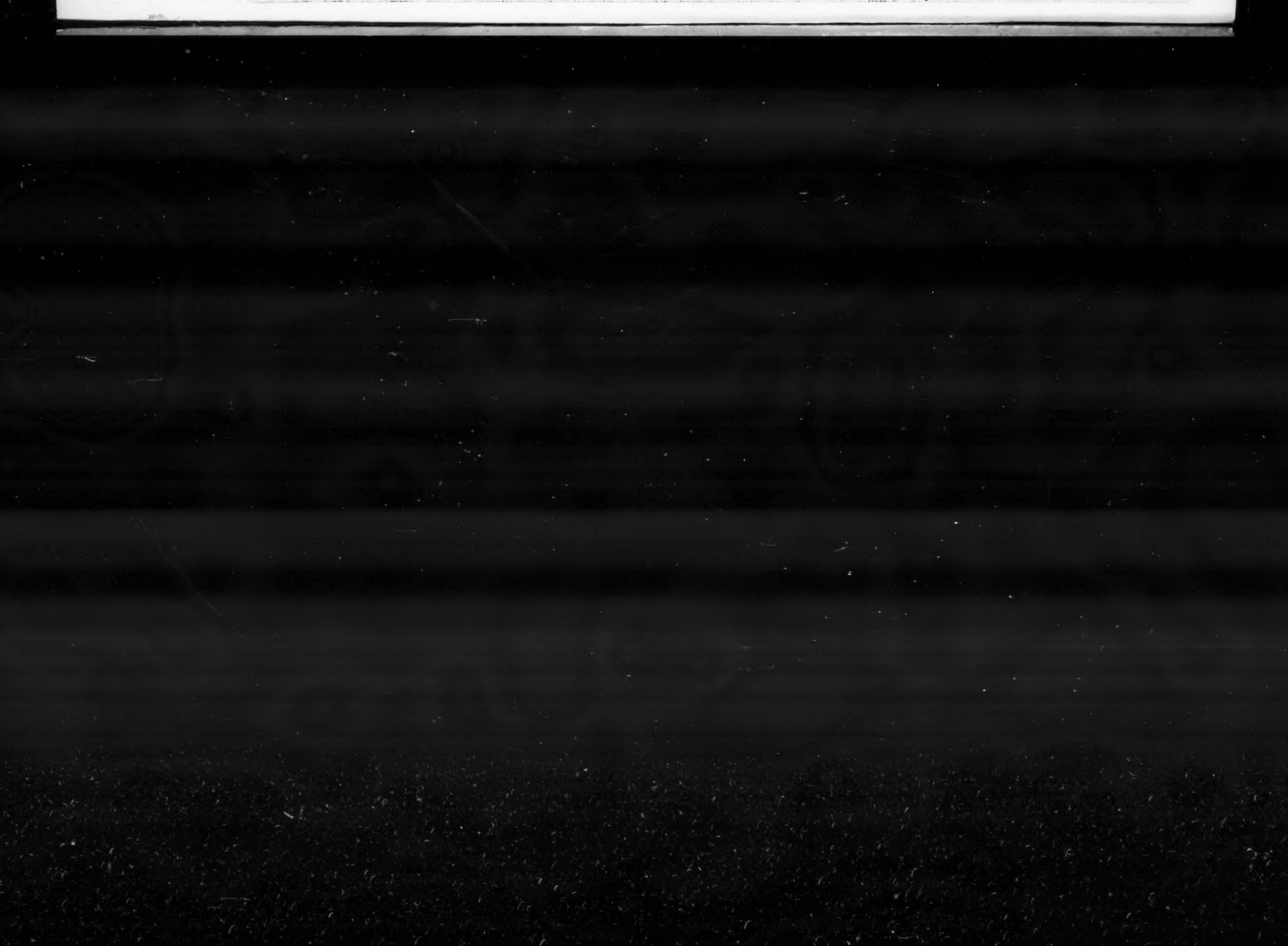

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Improvement Promised in East Texas

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Texas Railroad Commission Orders Curtailment of About 88,000 Bbls. per Day in the Whole State

By James McIntyre

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

The Texas Railroad Commission has ordered that production in Texas be cut to a maximum of 692,000 bbls. in round numbers. The production last week averaged 779,661 bbls. Thus the commission proposes to curtail about 88,000 bbls. per day. If the producers obey this order it will have a very good effect on general conditions in the industry.

Nearly all California, New Mexico and Oklahoma operators are agreeable to the curtailment of production, and outside of East Texas there is little objection to tightening up on crude outlet in that state. Most of the objection to curtailment in East Texas has come from men not regarded as oil men. Merchants, real estate men, daily newspaper editors, politicians and royalty speculators have figured largely in the clamor against prorating the East Texas Field.

The Texas Railroad Commission which has been dealing with oil producers alone in all the proration movements affecting other large flush Texas fields listened to the oil men in dealing with East Texas and while it did not cut the field to 50,000 bbls. per day as recommended it did reduce it to 90,000 bbls. for the present, with a sliding scale upward, giving the field a production of 130,000 bbls. in June.

Production in the United States last week took a downward turn for the first time in several weeks. Potential tests in Oklahoma, which will be concluded by the middle of this month, have increased the crude oil output in that state. After the middle of the month the situation in Oklahoma should again be well in hand, and if there is any increase it will be because there is an increased demand for crude owing to the approach of the season of greater gasoline consumption. This change has not yet manifested itself, little if any improvement being reported in the refinery and gasoline market situation if it is regarded nationally.

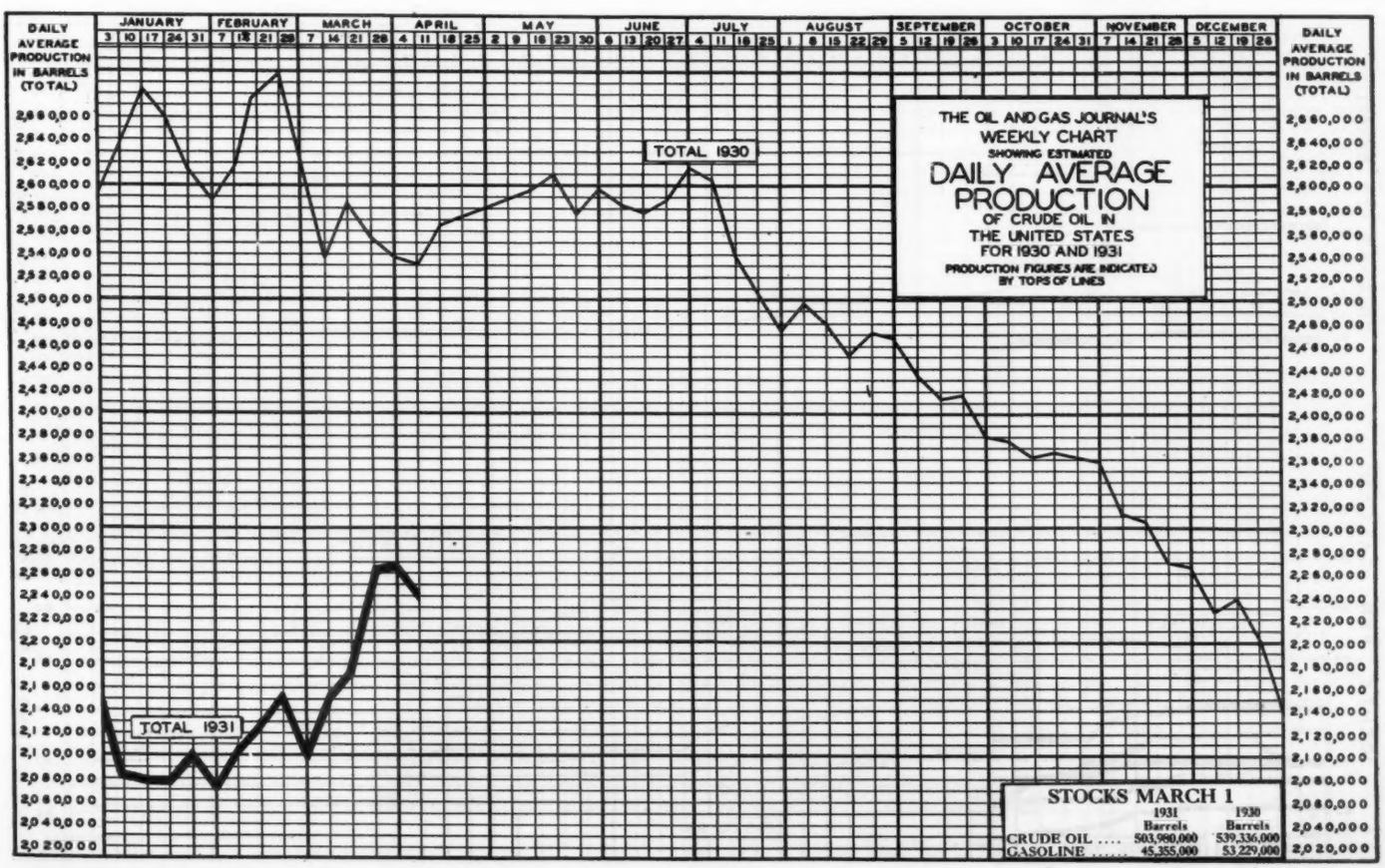
The industry will study with interest the report of the special committee on supply and demand appointed by the Federal Oil Conservation Board which was made public this week and which gives a measure of the crude needs from the different oil producing states covering the six months beginning April 1.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended April 4 and a comparison with the previous week follows:

	Apr. 4	Mar. 28
Oklahoma—		
Oklahoma City	127,435	120,910
Seminole-St. Louis	147,925	185,480
Remainder of State	235,530	245,740
Total Oklahoma	510,890	552,130
West Texas—		
Hendricks	46,630	47,617
Yates	96,761	95,030
Remainder	100,014	93,135
Total West Texas	243,405	235,782
North Louisiana	39,260	39,715
Arkansas	47,175	46,620
North Central Texas	79,672	78,897
Texas Panhandle	52,065	55,936
East Central Texas	190,720	165,749
Kansas	108,605	109,620
Total Mid-Continent area	1,271,792	1,284,449
Gulf Coast	172,997	170,762
Southwest Texas	67,544	78,852
Eastern	110,000	111,000
Rocky Mountain area	96,927	94,976
California—		
Santa Fe Springs	70,750	73,500
Long Beach	89,750	90,000
Playa Del Rey	29,750	29,250
Elwood	35,000	35,000
Ventura Avenue	44,500	45,000
Kettleman Hills	25,000	24,750
Remainder of State	229,000	232,000
Total California	523,750	529,500
Total United States	2,243,010	2,269,539

→ Decrease 26,529 Bbls. Daily ←



Large Order for Oklahoma Gasoline

Major Company Buys Five Million Gallons for Prompt Delivery. Fuel Prices Continue to Weaken

By C. O. Willson

A purchase of approximately 5,000,000 gallons of 60-62 400 endpoint gasoline by one of the large oil companies was the most important development of the week in the Oklahoma (Group 3) market. The bulk of the order was placed with Oklahoma refineries and the remainder in competitive areas so that the new business had direct bearing on Mid-Continent and Middle Western markets. The gasoline purchased was the regular grade of 60-62 400 endpoint with an average anti-knock rating requirement.

The same company several weeks ago purchased a similar quantity of gasoline, North and Central Texas refiners getting the bulk of the business at that time. The company also recently contracted with Mid-Continent natural gasoline manufacturers for approximately 6,000,000 gallons of 96 recovery natural gasoline. Deliveries which are to extend over three months, started April 1.

Except for the 5,000,000-gallon purchase there were few developments of an encouraging nature to the sellers. General trading on the spot market continued dull not only in refinery gasolines but also in natural gasolines, all grades of which slumped to new price lows. Grades BB and C are selling under 2 cents a gallon and the Grades AA and A were freely available at a price range of 2⅛ to 2¼ cents.

Fuels from the prime white distillates to the lowest gravity residuum products are dull with generally lower prices, the high gravity fuel oils and furnace oils being particularly weak. Kerosene is not active and manufacturers of bright stocks and steam refined stocks complained of price cutting in their markets. The demand for wax was fairly active.

REFINED MARKET BAROMETER

Scattered price reductions in several refined products became effective the past week. In the East Coast and Gulf Coast areas, several of the major refiners reduced Diesel oil prices 10 cents. Fuel oils generally are not strong and new business both along the coast and at interior refineries was placed at lower prices. Gas oils were easy as were furnace oils due to the end of the burning season. Refinery gasoline prices outside California held fairly well although considerable material continues to move under the general market. Tank wagon and service station markets are unsettled reflecting the tank car situation. Natural gasoline prices continued to slump reaching the lowest levels in the Mid-Continent in the past 15 years. Kerosene prices unchanged. No improvement noted in lubricants and wax.

East Coast—Diesel oil prices reduced. Gasoline unsettled with no changes in general quotations. Kerosene weak. No change in bunker fuel oils. Gas oil demand less. Lubricants and wax slow.

Mid-Continent—Domestic grades of refinery gasoline unchanged. High gravity gasolines lower. Natural gasolines again decline. All products sold as fuels weak. Slow demand for cylinder stocks.

California—Refinery gasoline and natural gasoline prices decline following recent crude oil price reductions. Fuels weak.

Chicago—Gasoline market not active and buyers able to secure price concessions. No improvement in demand for fuel oil, gas oil and distillate and prices generally lower.

Pennsylvania—High gravity gasolines lower in price. No important changes in cylinder stocks and neutrals.

Gulf Coast—Gasoline market weak both for export and domestic movement. Better tone in market for pale and red oils. Fuels and gas oil unchanged.

Some gasoline tank car sellers are concerned over the situation in the tank wagon and service station markets expressing the opinion that it points to a continuance of low tank car prices. Several of the major distributors apparently are determined to recover some of the business they have lost in recent months to smaller concerns which in most cases have been quoting lower tank wagon and retail prices and they are doing whatever is necessary to accomplish this end.

In Oklahoma, several of the larger companies are offering contracts to retailers guaranteeing them five or more cents under the regular retail price for the ordinary grade of white gasoline. These agreements vary as to their terms but usually provide for an exclusive handling of the refiner's products including lubricating oils, greases and premium grades of gasoline.

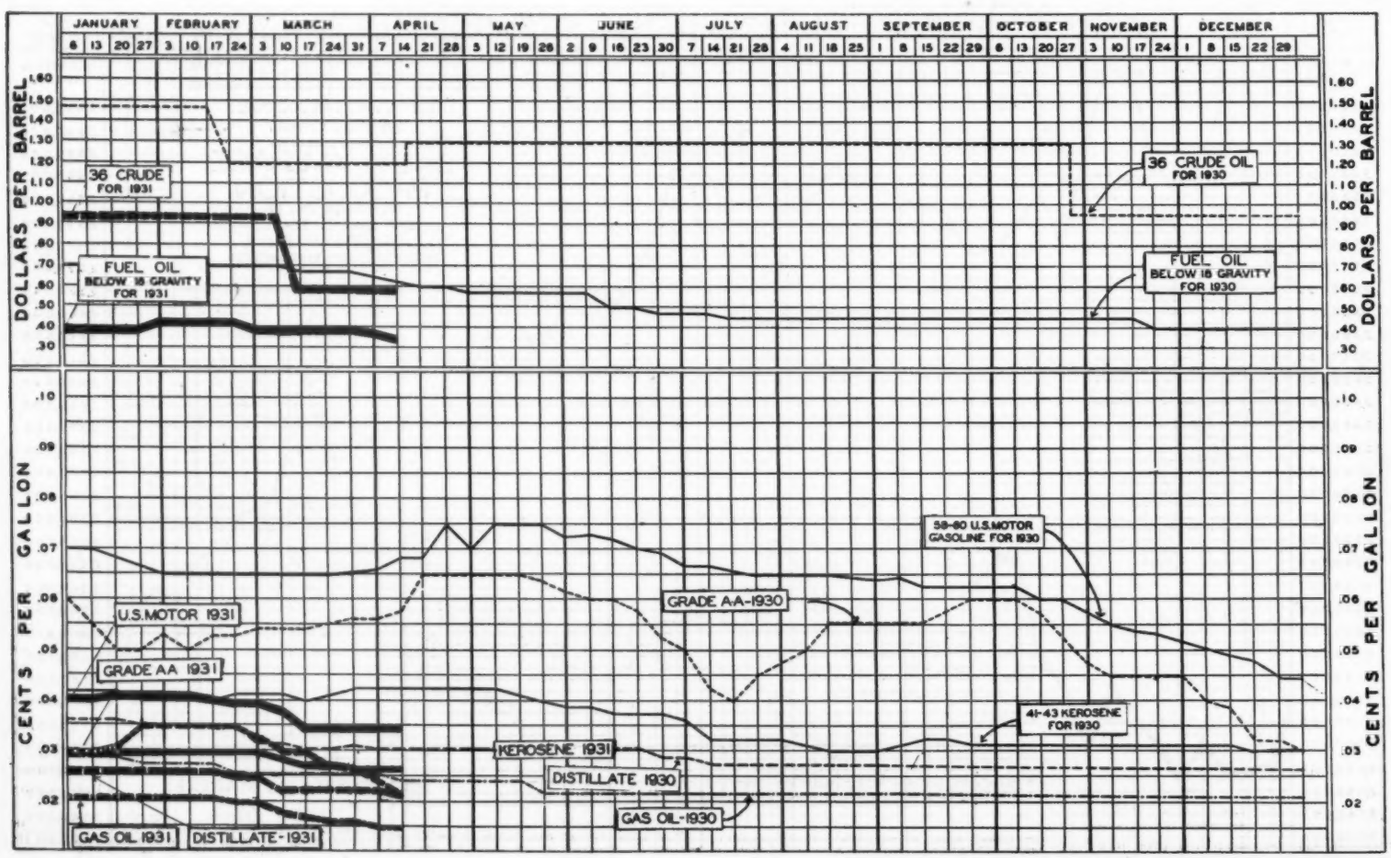
The actual workings of these agreements are shown in the case of Oklahoma City. In that city, the regular grade of white gasoline is bringing 13 cents a gallon at the stations of the larger distributors. On a contract with a retailer, 5 cents is subtracted to cover the State's gasoline tax leaving a net price of 8 cents. With a 5-cent guarantee the refinery seller gets 3 cents a gallon, which is the tank wagon price. It requires at least 2 cents a gallon to operate a tank wagon delivery, which means 1 cent a gallon at the bulk stations. All of the large distributors have a transportation charge of from one-half to 1 cent a gallon between their refineries and bulk stations which means that the net back to the refinery is one-half cent or less.

In some other parts of the State, the return to the refiner is more than in the case of Oklahoma City but in all cases it is below the spot market for U. S. Motor gasoline.

The situation in Oklahoma is typical of conditions found in many other states of the Southwest and Middle West. Several refining organizations including some of the larger operators are continuing to make contracts with jobbers which guarantees them 6 to 6½ cents under the service station prices. In the tank wagon and service station end, the lease and agency agreements or some other type of contracts are being made.

Should there be another 2-cent general reduction in tank wagon and service station schedules the return to refiners at their plants would be 1 cent or less. In fact with a strict interpretation of these contracts, some refiners would be placed in the position of not only giving the jobber his gasoline, but paying him 1 or 2 cents a gallon for handling it. These cases of course are the exception but they

(Continued on Page 131)



Some Crude Oil Gathering Problems

Changed Conditions in Old Settled Production Fields Present New Engineering Problems

By L. G. E. Bignell
Petroleum Engineering Editor

Distress oil may be described as that crude oil which cannot find an outlet to markets because of lack of pipe line connections, and it may be found in either flush or old fields. In flush fields there are times when oil that is run from the well to the pipe line run tanks cannot be handled by the pipe line companies and taken away from the lease. In the older fields it is often unprofitable to produce small wells and changes made so affect a lease as to make it necessary to disconnect pipe lines. Either type of oil is known as "distress oil" and each case requires special handling.

A veteran of many seasons of oil handling in the Alluwee district, Oklahoma.

In December, 1930, the Prairie Oil & Gas Co. announced that it would withdraw as a purchaser of crude oil in the fields of northeastern Oklahoma and eastern Kansas after January 1, 1931. Some of the leases affected were able to make new pipe line connections prior to January 1, but it has been estimated that there was approximately 31,500 bbls. of distress oil without pipe line connections on that date.

Motor that drives the pump in the semi-automatic pipe line station of the Stanolind Pipe Line Co. at Big Creek, Okla. Mounted near the ceiling to prevent flood water from reaching it.

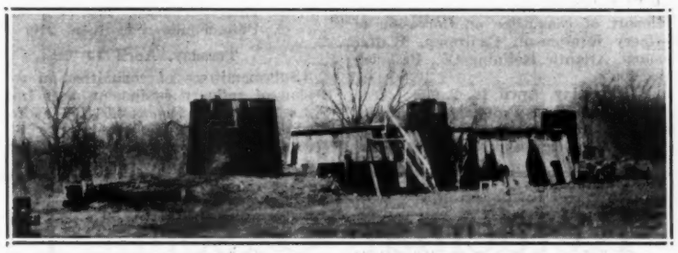
Other connections were made as rapidly as details could be worked out and there is now only about 3,500 bbls. of oil that has not been able to find outlet to the market through a pipe line.

To take care of those old wells presented many problems to the pipe line companies and some idea of the size of the wells affected and the amount of oil they produced prior to January 1, can be secured from the following tabulation taken from a paper presented by H. G. Ellis before the Bartlesville Engineers Club.

District—	Leases	Bbls. per lease	Av. bbls. per lease
Eastern Osage County	217	1,6	
Nowata County	336	1,182	3.5
Rogers County	202	1,026	5.0
Tulsa County	294	1,114	3.7
Washington County	396	931	2.3
	1,445	6,219	4.3

New Gathering Lines Needed

The Stanolind Pipe Line Co. had some lines that served portions of some of the pools involved and it, together with the Stanolind Crude Oil Purchasing Co. agreed to take as much of the distress oil as possible. The problem was a complicated one and was turned over to the engineering and operating departments of the Stanolind Pipe Line Co. for handling and the basic plan was worked out under the supervision of William G. Heltzel, general superintendent. It is understood that from 2 to 12 men in the Stanolind Pipe Line Co. have been kept busy gathering data and coordinating it since the decision to take this oil was made.



Type of wooden tank batteries common to the old pools north of Chelsea, Okla.

All negotiations have of necessity been based upon sound economics for it is quite obvious that any contracts entered into by either producers or purchasers of crude oil based upon any proposition that would have shown a loss of money to either party now or later would have been unwise and impossible to fulfill.

Each area was considered separately to determine the amount of additional pipe lines needed to supplement the existing lines of the Stanolind system to permit connections to all leases that could be handled within economic limits.

With the amount of additional oil which could thereby be gathered, the increased gauging and other expense and the increase in revenue known, it was possible to make calculations showing how much money could be spent by the purchasing and pipe line companies so that the operating costs plus a reasonable depreciation would not continuously show a deficit to the pipe line company.

While the pipe line company was considering these problems a committee made up of producers in these areas made definite proposals to the Stanolind Pipe Line Co. concerning the various pools and requested that the Stanolind companies buy and run the oil under a five-year contract at the posted market price in the Mid-Continent Field of the Stanolind Crude Oil Purchasing Co., for crude oil of the same kind and quality on the day said oil is delivered.

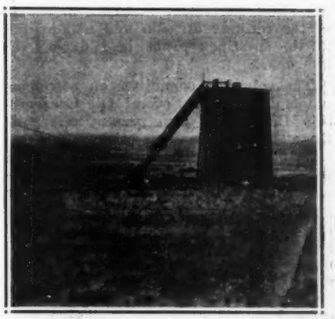
This relief work is being continued as shown by a statement issued by the Standard Oil Co. of Indiana on March 27 to the effect that where the Stanolind Pipe Line Co. has no gathering facilities to complete the agreement to provide temporary relief for the Kansas stripper wells for a 60-day period, it had issued an order to purchase stripper oil at the rate of 6,000 bbls. a day up to April 14.

The Standard Oil Co. of Indiana also issued an order for 2,000 bbls. of crude oil a day from the stripper wells to be taken on a more permanent basis beginning April 15. This is in conformity with its agreement made at the conference of oil company's representatives with Governor Woodring of Kansas to work out the settlement of the relief problem for the small wells of Kansas. The governor secured pledges from the pipe line companies to an agreement to accept 2,300 bbls. of oil daily from the stripper production and he is now working to provide a permanent outlet for the balance of this distress oil.

Engineering Problems Numerous

Early in the negotiations it became very evident that it would be necessary to set up some equitable system of dividing costs of laying the new lines to serve the numerous leases needing relief. This accounting system would have to take into consideration the fact that many of the operators had pipe on hand, could supply labor for ditching and laying the pipe, and by resetting lease tanks in many places could reduce the length of line needed to serve their lease, but some of them did not have money with which to pay for such changes.

As 2-inch pipe was found to be the size used in the majority of lines that connected with the run tanks it was decided to make this size pipe the basis for calculations and allow or charge for it upon the basis of 10 cents per foot. This price was based upon the pipe being in good condition and meeting test requirements. In addition to the cost of the pipe there was a labor charge, based upon the actual time required to lay the pipe, also to be charged to the producer and likewise made payable in 2-inch pipe at the above value.



The "pickle barrel" type of lease tank of the Nowata district, Oklahoma.

C. F. Gray, district superintendent of the Stanolind Pipe Line Co., Nowata, Okla., at the control gates of the Big Creek station.

To be certain that this labor charge was correct it was never estimated, but after the work was done the records of the timekeeper were taken as the basis for the charge and no profit or additions of any kind made to the actual outlay in labor costs.

The producer then had the option of paying in cash or in 2-inch pipe or its

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Semi-automatic pump station of the Stanolind Pipe Line Co. at Big Creek, Nowata district, Oklahoma, showing high dyke needed because of flooding of the area by overflow of Big Creek.

To Report On Needs Next Six Months

Results of Committees on Statistics and Economics to Feature A.P.I. Semiannual Meeting at St. Louis

Reports on investigations as to the quantities of crude oil and gasoline required in the United States from April 1 to September 1 will be an outstanding feature of the first semiannual meeting of the refining division which will be held in St. Louis April 15 and 16 at the Statler Hotel.

The report of the committee on refinery statistics and economics will be presented at the meeting Wednesday night by R. C. Holmes, chairman. Mr. Holmes, who is president of The Texas Corporation, is also vice president of the American Petroleum Institute in charge of the refining division and will preside at the meetings to be held during the two days.

The volunteer committee on petroleum economics of the Federal Oil Conservation Board will also present a report. Round-table discussions will follow.

Both committee made reports last year which have been helpful to the industry

R. C. Holmes
President of The Texas Corporation

as a guide to crude oil and refinery operations over the past six months. It is expected that the new reports will serve a similar purpose for the six-month period ending September 1.

In addition to the reports dealing with the economic developments there will be several papers describing technical phases of refinery operation. The first session Wednesday afternoon will be devoted to the discussion of motor fuels. H. C. Dickinson will report on the work of the United States Bureau of Standards in perfecting a standard for testing the antiknock properties of motor fuels. Oscar C. Bridgeman, of the bureau, will present a paper on the relationship between fuel line temperature and vapor lock. Technical sessions will also be held Thursday morning and afternoon.

In addition to the regular sessions, several important committee meetings will be held starting Monday morning. A meeting of the Institute's board of directors will be held Thursday evening.

Following is the official program:

MOTOR FUEL

Wednesday, April 15, 2 p.m.

"Progress Toward a Standard for Determining the Antiknock Value of Motor Fuels," H. C. Dickinson, United States Bureau of Standards, Washington, D. C.

"Automobile Fuel Line Temperatures and Vapor Lock," Oscar C. Bridgeman, United States Bureau of Standards, Washington, D. C.

Report of committee on Testing Methods and Specifications, K. G. Mackenzie, chairman, The Texas Company, New York, N. Y.

Wednesday, April 15, 8 p.m.

Report of committee on Refinery Statistics and Economics, chairman, R. C. Holmes, The Texas Company, New York, N. Y.

Report of Federal Oil Conservation Board's volunteer committee on petroleum economics. (Presentation of reports to be followed by round-table discussion. All refinery executives invited to attend.)

REFINERY ENGINEERING

Thursday, April 16, 10 a.m.

"The 18-8 Iron-Chromium-Nickel Alloy with Particular Reference to Its Characteristics for Cracking Coil Service," H. D. Newell, Babcock & Wilcox Tube Co., Beaver Falls, Pa.

"Corrosion Problems Affecting Oil-Vapor Condensers," A. E. Pew, Sun Oil Co., Philadelphia, Pa.

Report of committee on Corrosion of Refinery Equipment. Chairman, Walter Samans, Atlantic Refining Co., Philadelphia, Pa.

Thursday, April 16, 2 p.m.

Manual on Fire Protection in Refineries, C. H. Haupt, Standard Oil Development Co., Elizabeth, N. J., chairman, committee on Fire Prevention in Refineries.

A round-table discussion of an outline of the proposed A.P.I. Manual on Fire Protection in Refineries.

Manual on Disposal of Refinery Wastes, J. S. Hess, Sinclair Refining Co., New York, N. Y., chairman, committee on Disposal of Refinery Wastes. A round-table discussion of waste disposal problems with particular emphasis on a tentative draft of Part II, A.P.I. Manual, which covers waste gases and vapors.

Report of committee on Accident Prevention in Refineries, chairman, C. W. Smith, Standard Oil Co. of Indiana, Chicago.

COMMITTEE MEETINGS

Monday, April 13

9 a.m. Subcommittee of statisticians of committee on refinery statistics and economics. Chairman, John D. Gill, Atlantic Refining Co., Philadelphia, Pa. Room 208.

2 p.m. Committee on standardization of refinery equipment. Chairman, Henry Thomas, Sun Oil Co., Philadelphia, Pa. Room 210.

Tuesday, April 14

(Subcommittees of committee on corrosion of refinery equipment meet from 9 to 11 a.m. in Rooms 204-206 as follows):

9 a.m. Condenser corrosion. Room 204.
Metal test sample corrosion. Room 206.

10 a.m. Crude fractionating still corrosion. Room 204.
Tank and piping corrosion. Room 206.

11 a.m. Pressure still corrosion. Room 204.

9 a.m. Committee on testing methods and specifications. Room 202.
Committee on fire prevention in refineries. Room 210.

10 a.m. Committee on disposal of refinery wastes. Room 212.
Committee on refinery statistics and economics. Room 208.

2 p.m. Committee on corrosion of refinery equipment. Room 204.
Committee on accident prevention in refineries. Room 206.
Committee on refinery technology. Room 202.

Chairman, E. W. Isom, Sinclair Refining Co., New York, N. Y.

Wednesday, April 15

10 a.m. General committee, division of refining. Adam Room. Chairman, R. C. Holmes, The Texas Company, New York, N. Y.

Thursday, April 16

4 p.m. Executive committee, Institute board of directors. Room. 210. Chairman, E. B. Reeser, Barnsdall Corp., Tulsa.

7 p.m. Institute board of directors (dinner). Adam Room.

Kettleman Gasoline Plant Unique

Superior's New High Pressure Absorption Unit Permits High Degree of Control. By-Passes Facilitate Cleaning Exchangers

By George Burdick
C. F. Braun & Co.

The Superior Oil Co.'s absorption and stabilizer plant in Kettleman Hills was designed for 100,000,000 cubic feet of gas at 485 pounds pressure, 3,500,000 feet of low pressure gas at 45 to 60 pounds pressure and 3,000,000 feet reabsorption vapors at 20 pounds. Of course, like most absorption plants for the fields, this plant was designed and installed before settled conditions of the wells could be determined. Even now its No. 2 Huffman will not be brought on production for several months. The ratio between the low and high pressure gas is greater than anticipated because of the large oil production of its No. 1 Huffman. Some two months ago an additional low pressure absorber was installed and the plant capacity for low pressure gas is now 7,000,000 cubic feet a day.

This paper presents a general description of the plant and also data showing operation of the high pressure absorbers and stabilizer column. The absorber and stabilizer units together with the still are the prime and controlling factors of gasoline production in any plant.

The plant consists essentially of two distillation units in line with stabilizer unit, the stabilizer unit to the east and Units 1 and 2 extending to the west. On west end of this line is the absorber unit consisting of five high pressure, one low pressure and one reabsorber. The pump house is centrally located directly south 20 feet from the distillation units, and between them and the cooling tower. This arrangement gives ready access to all control boards. The cooling tower runs parallel to the distillation and stabilizer units and separates the operating portion of the plant from the battery of gasoline storage tanks. This line of ten 10'x40' horizontal tanks run parallel to the axis of the cooling tower. A tunnel through the lower center section of the cooling tower affords direct passage between the storage and the plant proper.

The finished gasoline stripping pumps are located at the west end of the storage tanks. All gasoline is moved at high pressure through a pipe line. The boilers are located across the road and 580 feet north of the plant; the compressor house 200 feet to the east of the boilers, while the crude oil storage is one-quarter of a mile east. This plot plan—storage tanks separated from the main distillation unit by a cooling tower, 600 feet separating these two units from the boilers and a greater distance to the crude storage—reduces fire risks to a minimum. All lines, tube turns, fittings and valves, except water suction, are extra heavy throughout, which again is a precaution against leaks and minimizes fire hazards.

As mentioned before, the plant consists essentially of two distillation units. The heat exchangers, coolers and preheaters are of the same capacity, same size and number in each unit. The still reheater and condensers of Unit No. 1 are some 35 per cent larger than the corresponding apparatus of Unit No. 2. Unit No. 1 was designed to supply 425,000 gallons of oil daily to four 48-inch diameter 20-tray absorbers, each capable of treating 20,000,000 cubic feet of gas at 485 pounds per square inch gauge. Still No. 1 is 6 feet in diameter and has 16 bubble trays. The capacity is 80,000 to 90,000 gallons of raw gasoline and 425,000 gallons of absorption oil daily.

The flow of oil is as follows: The fat oil from the absorbers at 485 pounds per square inch gauge passes through reducing valves into a primary fat oil vent tank at 125 pounds per square inch gauge. Here entrained gases and liberated vapors are released and pass on to the low pressure absorber. The fat oil with 125 pounds pressure back of it passes through the heat exchangers, where it is raised to 260° F.-280° F. and then into a secondary vent tank at 60 pounds per square inch gauge. The vapors from this tank enter the still above tray 10, while the oil flows through the two preheaters, which are steam heater type, and into the still above the eighth tray from the bottom.

The still which operates at some 30 pounds per square inch gauge uses steam for stripping. After the oil is flashed in the partial atmosphere of steam on tray 8 and subjected to a short time contact on tray 7 it passes through an outside reheater where virtually all of the remaining gasoline is flashed. The oil returns to the still on tray 6 at the same temperature to which it was raised in the preheaters before entering the still. This effects a distinct saving in agitation or stripping steam. The steam, of course, is introduced below the bottom tray.

The denuded or lean oil flows under still pressure through two gravity heat exchangers. It is then picked up with a centrifugal pump and discharged at 250 pounds per square inch gauge through the pressure heat exchanger and oil coolers. At this point a three-stage centrifugal pump boosts the oil from a suction pressure of 185 pounds to a discharge pressure sufficiently high to enter the high pressure absorbers at 485 pounds per square inch gauge. This flow arrangement takes full advantage of the 250-pound fittings, exchangers and coolers. The only high pressure oil fittings required are those around the absorption

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Movement of Pipe in Subsoil Discussed

Probability of the Expansion Being Governed by Area of the Pipe Exposed to the Soil. Further Tests to Be Made

By W. M. Henderson
Superintendent of Distribution, Los Angeles Gas & Electric Corp.*

The extent to which a pipe is free to move in the subsoil is not an established nor even an accepted fact.

In distribution practice the possibility of movement is frequently ignored. If expansion joints are provided, there are no fixed rules to guide their installation or location.

Some experimental work was conducted under the direction of the Linde Air Products Co. and reported in a pamphlet entitled, "Controlling Temperature and Bending Strains in Bronze-Welded C. I. Pipe Lines." There is also a theoretical study of the subject by Professors Jones and Weeks, of the University of California. These particular references do not cover the subject sufficiently to convince a distribution engineer that movement must be provided for in the installation of pipes.

The questions at issue may be set up as:

1. Is buried pipe free to move?
2. Effect of temperature change on buried pipe.
3. What effect has soil texture on the resistance to move?
4. Degree of movement for a given temperature change:
   (a) On various diameter pipe.
   (b) On plain pipe.
   (c) On wrapped pipe.

Primarily, the problem involves steel pipe with rigid joints, such as screw couplings or welded joints. Cast iron pipe, bell joints, or patent couplings are assumed to possess expansion at each joint.

Pipe suspended in the atmosphere, free to move, will expand or contract by the force of the stress developed by a change in temperature. The coefficient of expansion for the particular pipe material may be obtained by reference to any engineering handbook. This movement, under the above conditions for standard pipe, regardless of size, will amount to .76 inch for a raise of 10° F. per 100 feet length, or about 1 inch for a raise of 132° F.

Seizing Power of Soil

Pipe buried in the subsoil is restrained in its movement by the resistance or seizing power of the soil. Any temperature change that such pipe undergoes must either overcome this restraining effect or, failing to do so, build stress into the pipe line.

In order to determine by experimental test that actually occurs, an installation has been made with equipment and instruments for producing and recording the effect. A complete test will involve considerable time, necessitating, as it does, a variety of sizes and kinds of pipe and a repetition of some of the tests in soils of different texture.

The location chosen for the first observation was in soil mainly adobe clay with a small mixture of sandy loam.

Two 100-foot lengths of 2-inch pipe, and two 100-foot lengths of 10-inch pipe —both with welded joints—are under test. One full length of each size is plain pipe, the other wrapped with a standard asphalt impregnated felt paper with a cover coat of asphalt.

The choice of pipe sizes—2-inch and 10-inch diameter—offers sufficient difference of area exposed to the soil to indicate the effect of surface contact to retard movement.

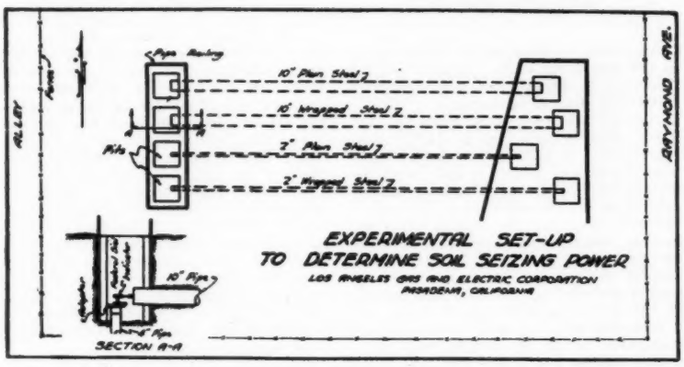
Wrapped pipe was selected in the preliminary test on the theory that the pipe, if subject to stress, would move in the jacket.

The temperature change is registered on a recording thermometer.

*Before A.G.A. Distribution Conference, Cincinnati, Ohio.

The expansion or movement is indicated on a Federal dial indicator reading directly to one-ten thousandth of an inch. The range of the indicator is but four-tenths of an inch, but by a suitable adapter the range is increased to 2½ inches without sacrificing any of the accuracy.

The pipe ends are extended into vaults built in the earth with wooden retaining walls. In each vault is anchored a post, buried in the ground and protected from any possible earth movement, and on this is mounted the dial indicator.



To secure temperature variation, an artificial method has been adopted: Hot water circulates through the pipes. This procedure is not altogether satisfactory, as the temperature range is not uniform along the pipe length. Difficulty was also experienced in recording the temperature, as the arrangements provided for a temperature record of the circulated water. A contact thermometer will meet the situation, but as yet nothing suitable has been secured.

As the action of the pipe in the subsoil is somewhat of a mystery, an assumption had to be made as to the effect of time on the ability of the soil to resist the movement of the pipe. In this respect it was considered that a pipe laid in the fall of the year would likely be buried at temperatures higher than atmosphere, due to absorption of radiant sun rays. The chilling effect of the ground would reduce this temperature, and by February the minimum ground temperature would be reached. Thus, during the first winter the pipe would be exposed to the maximum temperature drop before the backfill had settled or packed and seized the pipe.

Test Samples

With this theory in mind, the test samples were laid and covered late in November, 1930. During this month daytime atmospheric temperatures ran well over 80° F. The backfill was tamped and watered, in accordance with general practice, and the surface of the ditch rolled by use of a 3-ton truck.

The test was made February 25 to 27, 1931. Measurements taken indicate expansion as follows:

	Inch
2-in., plain	0.1960
2-in., wrapped	0.2427
10-in., plain	0.0962
10-in., wrapped	0.0354

The above figures have little significance other than to demonstrate the probability of the expansion being governed by the area of the pipe exposed to the soil. The lack of consistency in the figures is believed to be due to faulty methods of recording the temperatures of the pipe metal. This was done by immersing the elements of recording thermometers in the liquid inside the pipe and trusting to conduction to give the true temperature of the pipe metal.

It is of interest to note that the pipe expanded in spite of the restraining power of the soil, and that the movement

(Continued on Page 126)

Progress in Study of Soil Corrosion

Eight Bureau of Standards Men and Three Research Associates Engaged on Problems Relating to Pipe Line Protection

By K. H. Logan
Bureau of Standards, Washington, D. C.*

The financial and moral support and encouragement which the Bureau of Standards has received for its study of soil corrosion has resulted in a growth of the work until at this time eight bureau men and three research associates are engaged on problems related to pipe line corrosion and protection. While the necessity for a better understanding of the fundamental principles involved in corrosion is recognized, the efforts of the bureau's soil corrosion section have been directed almost exclusively toward obtaining data of immediate practical use to the owners of underground pipe; it is believed that although the corrosion problems are far from solved it can be shown that large savings have already resulted from the facts brought to light and that still greater economies will result from the work now in progress.

The organization about to lay a pipe line through new territory is faced by two corrosion problems: the location of the corrosive sections of the right of way and the choice of the protection against corrosion.

Corrosive Soils

The work on methods of identifying corrosive soils has made considerable progress. The soil corrosion investigation started eight years ago, although incomplete, has furnished a large body of corrosion data. It has shown clearly that for at least the first eight years after a pipe line is laid the character of the soil rather than the type of ferrous pipe material controls the rate of corrosion. During this period one material or another shows some apparent superiority for local conditions, but the material which appears best under one condition may appear worst under another, and to date, with perhaps the exception of one set of specimens which should not have been submitted, the differences between the average performances of the several materials tested are small. It is possible, however, that as corrosion products develop the differences will increase, and for this reason the bureau feels that it should not make comparisons of materials until the trend of the test has developed more positively. Using the soil corrosion data as a starting point, the research associate supplied by the Cast Iron Pipe Research Association is now co-operating with the Department of Agriculture in making a map of the United State which will show roughly the distribution of the corrosive soils. As but a third of the country has been surveyed with respect to soils, and as less than 50 of more than 400 recognized soil series have been studied with respect to corrosion, the map now in progress must be far from complete.

For a long time, therefore, it will be necessary to determine directly the corrosiveness of much of the soil through which a line is to pass if an intelligent decision as to the protection of the line is to be made.

During the last few years there have been developed at the Bureau of Standards and in the laboratories of oil and gas companies several methods of determining soil corrosivity and of making soil surveys. A number of these methods, such as those described by Putnam, Corfield, Legg and Shepard, involve soil resistivity as one of the soil properties to be directly or indirectly measured. Since soil conductivity is electrolytic the determinations of soluble salts in soils or soil solutions also has a correlation with soil resistivity. Whether electrical conductivity bears a fundamental relation to corrosivity or not there can be no doubt that the two are closely associated in soils high in soluble salts and that for such soils any method in which electrical resistivity is a major factor will serve to roughly indicate soil corrosivity. The choice between the methods will, therefore, be governed largely by the ease of application to the job at hand and by the importance from the point of view of predicting corrosivity of the factors by which the several methods differ. The Bureau of Standards soil corrosion data have been of considerable assistance in comparing methods of determining soil corrosivity, since they furnish data with which to check the results of the methods under investigation. It is very important that the methods should also be tried out simultaneously along several pipe lines, the conditions of which can be determined by inspection. While most soils high in soluble salts or low in elec-

(Continued on Page 126)

*Before A.G.A. Distribution Conference, Cincinnati, Ohio.

Mid-Continent Refiners Increase Runs

April Schedule 48,000 Bbls. Above March but 58,000 Bbls. Below That for Year Ago. Two New East Texas Plants

By W. T. Ziegenhain

Refiners in each of the six divisions of the Mid-Continent have estimated running more crude in April than in March and the total for the area will approximate an increase of 48,000 bbls. over that of the past month. The North Central Texas group shows the greatest increase, while Oklahoma also shows a substantial increase.

RUNS TO STILLS AT MID-CONTINENT REFINERIES

1929	
April 1	530,530
May 1	577,509
June 1	585,030
July 1	565,800
August 1	555,259
September 1	552,300
October 1	544,720
November 1	545,473
December 1	540,630
1930	
January 1	535,460
February 1	519,355
March 1	531,500
April 1	555,250
May 1	574,300
June 1	572,250
July 1	548,475
August 1	526,400
September 1	498,710
October 1	518,800
November 1	506,700
December 1	478,360
1931	
January 1	478,795
February 1	470,125
March 1	449,634
April 1	497,391

MID-CONTINENT REFINERY OPERATIONS
(Based on operations April 1, 1931 and March 1, 1931)

	April				March		
District—	No. of plants	Daily crude cap. (bbls.)	Daily crack. cap. (bbls.)	Plants oper.	Runs to stills	Plants oper.	Runs to stills	Daily inc. March
Arkansas	9	47,800	21,250	9	27,830	8	21,000	6,830
Kansas	15	147,000	88,200	14	83,500	14	77,100	6,400
North Louisiana	7	54,300	18,000	5	29,325	4	28,975	1,250
Oklahoma	54	334,300	119,150	39	185,561	39	173,040	12,521
North and Cent. Texas	46	203,450	63,600	43	120,694	39	101,049	19,645
West Texas	29	147,600	53,250	20	50,481	18	49,370	1,111
Total	162	934,450	363,450	120	497,391	122	449,634	47,757

According to schedules established early in the month the daily average runs for April will be 497,391 bbls. compared with 449,634 in March, an increase of 47,757. However, compared to a year ago the April estimate this year is 57,859 bbls. below that in 1930 and remains lower than during any month in 1930 with the exception of December. This fact further substantiates the belief that refiners in the Mid-Continent are making every effort to hold gasoline stocks to a working margin and are not increasing their stocks beyond the point these stocks will be readily absorbed by the increased seasonal demand which will soon be felt.

Low refined oil prices have been the immediate factor in holding runs to a comparatively low figure and the lower crude prices have not served as an inducement to run more oil. It is the general opinion now that due to refined oil prices having dropped to a level which fully discounts the effect of the lower crude prices, only moderate increases will be noted in the crude runs over the immediate future, or just enough to take care of the expected better seasonal demand.

Oklahoma Operations

Oklahoma refiners increased their estimated runs 12,521 bbls. during April, the increase being the result of higher operating schedules throughout the greater portion of the list. One shut-down plant resumed operations during April, that of the Capital City Refining Co. at Oklahoma City, but the increase in the runs due to this factor is only 800 bbls. daily. Most of the refineries in the Oklahoma City area remain down, a continuous schedule of operations being observed only by the Black Gold Refining Co. Other plants located there have been operating on a rather irregular schedule depending upon the market on the refinery products and upon the crude supply and it is possible that one or more of the plants now shown as shut down will resume operations later in the month.

It is also possible that the Marathon Oil Co. will resume operations in its Boynton plant later in the month, the plant now undergoing several minor changes and repairs.

West Texas

West Texas refinery operations have not been materially increased and the schedule of runs for April is only 1,111 bbls. more daily than for March. Likewise, the status of the operating and shutdown plants remains unchanged, with the exception of the starting up of the Rio Grande Oil Co. plant of El Paso which will run 700 bbls. daily for April.

North Central Texas

Refiners in the North Central Texas group have established crude schedules which in general are higher than last month, bringing the total estimated runs for April to 120,694 bbls. compared to 101,049 bbls. for March. This general increase was augmented by two refineries resuming operations, and by two new refineries starting operating in the East Texas area. This includes the LaSalle Petroleum Co. at Burkburnett which will run 1,500 bbls. daily and the Atlantic, Pacific & Gulf Refining Co. plant at Wichita Falls, where a schedule of 5,000 bb'ls. daily has been established for April.

The new East Texas refineries to start up are the East Texas Refining Co. at Henderson on a 2,000-bbl. per day schedule and the Beacon Oil & Refining Co. plant at Friar Switch on a schedule of runs of 600 bbls. per day.

In addition to the plants previously announced for the East Texas area, the Slick Petroleum Co. proposes to build a 2,500-bbl. plant near Longview and expects to begin construction by May 10.

Arkansas and North Louisiana

Arkansas refinery operations have been increased and crude runs have been scheduled at 6,830 bbls. higher than during March. This increase is accounted for principally by the starting up of the Houston Oil Co. plant at Camden and the Simms Oil Co. plant at Smackover, each of which have estimated runs at 2,750 bbls. daily. Except for the resumption of operations in these two plants the general program of crude runs remains unchanged.

The plants in the North Louisiana area have shown slight increases in the

(Continued on Page 131)

REFINERY OPERATIONS IN OKLAHOMA
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
Anderson-Prichard Oil Corp., Cyril	5,000	4,500	4,500
Barnsdall Refineries, Inc., Barnsdall	6,000	2,500	3,200
Barnsdall Refineries, Inc., Okmulgee	10,000	5,000	3,500
Bell Oil & Gas Co., Grandfield	4,500	1,600	1,600
Black Gold Refining Co., Oklahoma City	1,500	800	800
Capital City Refining Co., Oklahoma City	2,500	800	(*)
Century Petroleum Co., Tulsa	500	(*)	(*)
Century Petroleum Co., Oklahoma City	2,500	(*)	(*)
Champlin Refining Co., Enid	16,000	8,000	8,000
Citizens Refining Co., Seminole	1,000	(*)	(*)
Continental Oil Co., Sapulpa	10,000	3,000	1,500
Continental Oil Co., Ponca City	30,000	19,400	15,000
Cushing Refining & Gasoline Co., Blackwell	1,800	1,500	1,500
Cushing Refining & Gasoline Co., Cushing	3,500	2,500	2,500
Deep Rock Oil Corp. (Shaffer), Cushing	10,000	10,000	10,000
Eason Oil Co., Enid	5,000	3,000	3,000
Electrol Refining Co., Oklahoma City	3,000	(*)	(*)
Empire Oil & Refining Co., Cushing	5,000	(*)	(*)
Empire Oil & Refining Co., Okmulgee	4,000	4,000	4,000
Empire Oil & Refining Co., Ponca City	8,000	8,000	8,000
Garber Refineries, Inc., and Omar Refining Co., Garber	3,500	2,200	2,200
Globe Oil & Refining Co., Blackwell	7,500	6,000	5,500
Globe Oil & Refining Co., Cushing	15,000	5,000	5,000
Gulf States Corp., Oklahoma City	2,500	2,000	3,000
Illinois Oil Co., Cushing	3,000	(*)	(*)
Imperial Refining Co., Ardmore	5,000	(*)	(*)
Johnson Oil Refining Co., Cleveland	6,000	4,600	4,800
Mid-Continent Petroleum Corp., West Tulsa	40,000	19,000	18,500
Marathon Oil Co., Boynton	2,500	(*)	1,500
Marathon Oil Co., Bristow	5,000	3,500	3,500
Morgan Development Co., Tonkawa	3,000	(*)	(*)
Peacock & Peveto Refining Co., Oklahoma City	3,000	200	600
Peppers Gasoline Co., Covington	1,000	685	670
Phillips Petroleum Co., Okmulgee	5,000	3,300	3,300
Producers Oil Co., Bristow	2,500	1,500	1,500
Producers & Refiners Corp., West Tulsa	6,000	4,000	4,000
Pure Oil Co., Ardmore	5,000	1,700	2,000
Pure Oil Co., Muskogee	9,000	7,500	6,000
Rock Island Refining Co., Beckett	3,500	3,500	3,500
Sinclair Refining Co., Muskogee	1,000	(*)	(*)
Sinclair Refining Co. (Pierce), Sand Springs	8,000	6,000	3,500
Standard Oil & Refining Co., Oklahoma City	2,000	(*)	(*)
Sun Oil Co., Yale	5,000	4,500	4,300
Sunray Oil Co., Allen	7,000	4,000	4,000
The Texas Company, West Tulsa	15,000	14,000	14,000
Texas Pacific Coal & Oil Co., Wynnewood	3,000	(*)	(*)
Tidal Refining Co., Drumright	15,000	9,000	9,000
Western Oil Corp., Beckett	2,000	1,400	1,400
Wewoka Refining Co., Wewoka	2,000	(*)	(*)
White Oak Corp., Allen	8,000	(*)	(*)
Wilcox Oil & Gas Co., Bristow	5,000	2,500	2,500
Wirt Franklin Petroleum Corp., Ardmore	4,000	2,776	3,170
Yale Oil Corp., Yale	2,000	1,000	500
Total	334,300	185,561	173,040

*Shut down.

REFINERY OPERATIONS IN WEST TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
Amarillo Producers & Refiners Corp., Pyote	3,000	(*)	(*)
Big Spring Refining Co., Big Spring	2,500	1,600	1,538
Big Lake Refining Co., Big Lake	2,000	(*)	(*)
Bluebonnett Oil Refining Co., Wickett	5,000	(*)	(*)
Burford Oil Co., Pecos City	6,000	4,500	4,500
Coltex Refining Co., Colorado	10,000	6,800	6,000
Cosden Oil Co., Big Spring	15,000	4,000	5,000
Deer Oil Corp., Luling	2,500	(*)	(*)
Grayburg Oil Co., San Antonio	6,000	(*)	(*)
Great West Refining Co., Big Spring	8,500	3,000	2,100
Gulf Oil & Refining Co., Sweetwater	5,000	5,000	5,000
Humble Oil & Refining Co., San Antonio	5,000	1,200	1,000
Humble Oil & Refining Co., McCamey	15,000	1,900	2,600
Magnolia Petroleum Co., Luling	5,000	4,200	4,200
Marathon Oil Co., Del Rio	5,000	2,500	2,500
Misko Refineries, Inc., Laredo	1,500	500	500
Mid-Tex Refining Co., Midland	2,500	(*)	(*)
Motor Fuel Products Co., Laredo	2,000	500	500
Pasotex Petroleum Co., El Paso	14,000	9,500	9,500
Pioneer Oil & Refining Co., Somerset	1,500	350	350
Richardson Refining Co., Big Spring	6,000	(*)	(*)
Rio Grande Oil Co., El Paso	6,000	700	(*)
San Angelo Refining Co., San Angelo	2,000	200	200
Sweetwater Oil & Refining Co., Sweetwater	2,000	(*)	(*)
The Texas Company, San Antonio	3,000	2,500	2,500
The Texas Company, El Paso	2,000	(*)	(*)
Tonkawa Petroleum Co., Pyote	5,000	(*)	(*)
Texas Mexican Oil & Refining Co., Laredo	600	500	500
Texas Petroleum Products Co., Somerset	1,500	700	600
Wickett Refining Co., Wickett	2,500	331	282
Total	147,600	50,481	49,370

*Shut down.

REFINERY OPERATIONS IN KANSAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
Barnsdall Refineries, Inc., Wichita	4,000	2,800	3,100
Derby Oil Co., Wichita	7,500	4,000	4,000
Eldorado Refining Co., Eldorado	4,500	2,700	2,500
Golden Rule Refining Co., Wichita	1,500	900	900
Kanotex Refining Co., Arkansas City	12,000	7,500	5,500
National Refining Co., Coffeyville	6,500	4,000	4,000
Peerless Oil Refining Co., Chanute	3,000	(*)	(*)
Phillips Petroleum Co., Kansas City	6,000	5,000	5,300
Shell Petroleum Corp., Arkansas City	22,000	14,000	10,000
Sinclair Refining Co., Coffeyville	12,000	9,000	9,000
Sinclair Refining Co., Argentine	9,500	4,500	4,500
Skelly Oil Co., Eldorado	23,000	12,600	11,800
Standard Oil Co. of Kansas, Neodesha	20,000	6,000	5,000
Vickers Petroleum Co., Potwin	3,500	2,000	2,500
White Eagle Oil Corp., Augusta	12,000	8,500	9,000
Total	147,000	83,500	77,100

*Shut down.

Menace of Gas Tax Evasion Spreads

Various Methods Used in Oklahoma to Avoid Payments. Refunds to Farmers Serious Phase of Problem

By Robert C. Conine

Drastic curtailment of refund and exemption privileges in connection with the state gasoline tax levies in every state of the Union and the District of Columbia is seen as the most important step toward the correction of a condition which is making it possible for many to view such taxes as confiscatory, or at least as in the nature of class legislation.

A closer study of the gasoline tax situation has been made in Oklahoma where the legislature recently enacted into law a bill increasing the gasoline levy from 4 to 5 cents to raise funds for unemployment relief and the purchase of field and garden seeds. In this State the problem of evasion of the gasoline tax has attained such proportions that strong agitation has been witnessed in the legislature to convert this form of chicanery from a misdemeanor into a felony, with the offenders being liable to charges of embezzlement.

Conditions in this State are closely duplicated in many of the other states where "bootlegging" of motor fuel makes it possible for dishonest filling station operators to sell gasoline at a price much below that of the legitimate dealer who is turning from 2 to 7 cents over to the State on every gallon sold. It should also be borne in mind, in viewing the gasoline tax situation, that in addition the sales tax on motor fuel (paid by the consumer but reactive as a deterrent to purchase) the oil companies pay production taxes, ad valorem taxes, franchise taxes, inspection taxes and income taxes. The transporters, distributors and retailers also contribute their share to the State.

Suits involving the collection of more than $180,000 on delinquent gasoline taxes have been filed by state authorities in Texas. Louisiana has filed writs of attachment against certain companies for alleged failure to pay the taxes. Kansas has arrested more than a score of dealers and convicted them of failure to make reports of gasoline received and to pay the tax. In Indiana, $115,000 has been collected in settlement of gasoline tax evasion suits. Kentucky has compelled blenders of kerosene and natural gasoline to pay the tax. And California, according to an investigator, is losing at least $2,000,000 yearly to the tax evaders.

Oklahoma's Situation

Oklahoma has 106 oil inspectors operating under the jurisdiction of the state corporation commission. Each of these levy assessments on all motor fuel above 50° at 60° F. in the amount of 5 cents per gallon. It is interesting to note that the current refinery price on U. S. Motor gasoline in the State is 3.5 cents. The maximum salary for these inspectors is $200 per month and is derived from inspection fees paid by the companies.

In the matter of combating tax evasions the State of Oklahoma has three principal obstacles to overcome. The State must stop the activities of the nocturnal operator who fills his tank truck at the plant of an unscrupulous refiner under cover of darkness, pays cash so that the transaction may remain unrecorded, and delivers his cargo to the third conspirator at the dispensing station. The State must find a means of eliminating the dealer who trades in the exemptions granted to farmers for gasoline purchased to be used in tractors and stationary engines. The State must thwart the dealer (and the blender, obviously) who mixes the untaxed kerosene with natural gasoline and offers for sale a motor fuel upon which no tax has been paid except on the relatively small quantity of natural gasoline. If the State is to retain certain gasoline tax revenues,

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PRICE ADVANCE SEEN

Gov. William H. Murray of Oklahoma predicts a return of crude prices to their normal level as the result of agreements he is confident will be reached among the states at the meeting of their representatives in Washington, D. C., on April 9, for the stated purpose of forming the Oil States League. According to Governor Murray he has received assurances that the following states will participate in the petroleum agreement: Oklahoma, Texas, Arkansas, Kansas, Wyoming, New Mexico, Colorado, Louisiana, California and Ohio.

The purpose of the Oil League, the execution of which Governor Murray said he was certain, will be to control drilling operations, output and storage of oil.

"I feel sure," the governor said, "that the April 9 meeting will be one of harmony and that agreements will be reached to curtail importations of crude oil by nearly 50 per cent, as well as to apportion equitably among the states the allowable production of crude indicated as necessary to restore normalcy. The formation of such a league among the states is constitutional and will stand unless Congress passes an act abolishing it. Each state will have an umpire and these umpires will form a council on proration to assure uniformity among the states."

Governor Murray actively accords with the proposition recently stated by Gov. Gifford Pinchot of Pennsylvania in a radiocast speech. Governor Pinchot urged that the tax collection system be changed so that assessments on gasoline levies be made at the source of the motor fuel.

An incongruous situation is seen in Oklahoma where some of the service stations post a price of 11.0 cents including the 5.0-cent excise gasoline tax, leaving 6.0 cents to cover the retailing, distributing and refinery costs of the motor fuel.

End of Seep Agency Recalls Old Days

Oil City Oil Exchange Once Made the World's Petroleum Market and Fortunes Were Won and Lost in Frenzied Speculation

By Thomas F. Smiley

Memories of exciting days in the early period of oil speculation and of men who made—or lost—fortunes in its wild fluctuations are revived by the action of the South Penn Oil Co., which on April 1 officially terminated the Seep Purchasing Agency, for half a century the largest buyer of crude oil in the eastern fields. After the Standard Oil Co. was organized in 1871 Joseph Seep was made the buyer of all the crude used by it until its dissolution by the courts in 1911, and he operated under the trade name "The Seep Purchasing Agency." When the Standard was dissolved Mr. Seep was made president of the South Penn, which had been a Standard subsidiary and which continued to operate the purchasing agency.

For many years betting on the vagaries of pipe line certificates afforded a method of gambling which lured thousands. The predecessor of the formal oil exchange was the "curbstone exchange" in Oil City, Pa., which provided a means for trading. Producers, dealers and onlookers gathered on the sidewalk in front of the offices of Lockhart, Frew & Co., refiners and buyers of crude, in Center Street, Oil City. They swapped stories, discussed the day's news and bought or sold oil.

In December, 1869, a permanent oil exchange organization was effected. Officers were chosen and a room on Center Street was rented for the transaction of business. In the fall of 1872 complications resulted in dissolution of the organization and for 15 months no fixed place existed for the meeting of oil buyers and sellers. In February, 1874, however, the exchange was reorganized with George V. Forman, a leading oil producer, as president, and for the next four years quarters in the Collins House were used.

Had "Modern" Conveniences

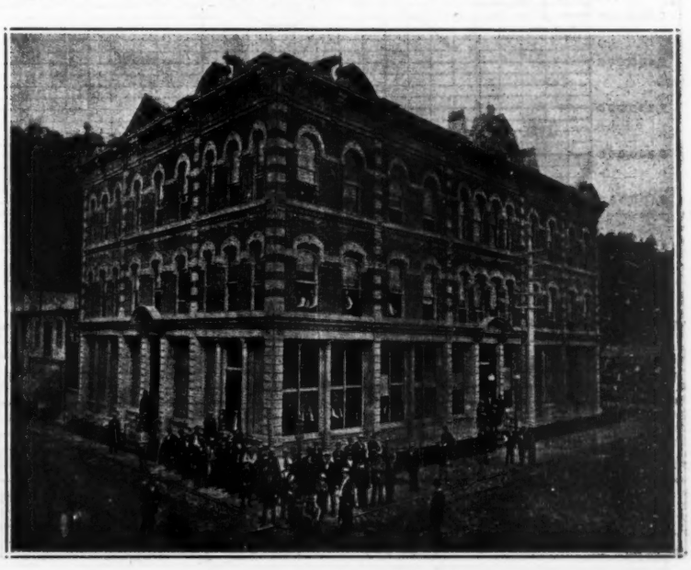
In 1878 the Oil Exchange Building shown in the accompanying old picture was opened. The new quarters provided offices, committee rooms, reading rooms, telegraph lines and various accommodations for the 400 members then on the exchange roster. The building was between Center and Elm Streets on Seneca Street. Beyond the building as shown in the picture may be seen part of the lettering on the sign which topped Paul's furniture store and undertaking establishment just across the Center Street bridge over Oil Creek. Rising in the background is old "Hogback."

In the beginning the oil transactions were sales of the actual product. Purchasers for Philadelphia, Pittsburgh and Baltimore refiners, acting as brokers, received a commission of 10 cents a barrel from buyers and 5 cents from sellers. There were no certificates or written obligations of any sort at first. A man's word was his contract. "Spot oil" was to be moved and paid for immediately. "Regular oil" allowed the buyer 10 days in which to put the oil on cars. "Future oil" was taken as agreed upon by the buyer and seller.

The hazards of primitive methods of transportation and rapid changes in supply and demand caused swift and violent fluctuations in the price of crude. Production was in the hands of hundreds of independent operators. Marketing was in the hands of dozens of independent refiners. The purchase and sale of oil for future delivery became a vocation in which fortunes were won or lost with ease. A 30-day option could see a pronounced change in the price of oil, with the result that a trade involving a few thousand barrels might raise a man from want to luxury, or the reverse, depending upon which end of the bargain he happened to be holding.

Introduction of pipe lines removed the

(Continued on Page 130)



Oil City Oil Exchange Building.

Discussions Feature Thurber Meeting

Natural Gasoline Plant Operators Present Problems in All Phases of Work. Aim to Lower Manufacturing Costs

By L. E. Bredberg

THURBER, Tex., Apr. 6.—The fifth annual meeting of natural gasoline plant operators and others connected with the natural gasoline industry in the State of Texas, was held at Thurber, Tex., on March 31. Discussions of papers read on plant operations, plant equipment and treating problems were participated in with unprecedented interest.

Dr. E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., Fort Worth, presided at the morning session of the meeting and J. R. Jarvis of the Lone Star Gas Co., Dallas, presided over the afternoon session, the evening meeting being contributed to by Don Wallace, of the Mid-Continent Oil and Gas Association, and H. N. Blakeslee, safety director of the American Petroleum Institute. These men confined their talks to the safety side of the industry. Mr. Wallace stressed the fact that all diligent workers in the industry should be given the feeling of security on their jobs. In order to establish this confidence all men connected with a company, from the president and general manager down to the gauger and loading rack man will harmonize with the new conditions which are continually presenting themselves. This harmony in work, which will come about by closer co-operation between the men, will aid materially in lowering the number of accidents in the industry every year, and all the companies interested in the manufacture of natural gasoline are especially anxious to cut down accidents.

Mr. Blakeslee cited some interesting facts about the curtailment of accidents in the natural gasoline industry, stating that no serious accident had been reported in gasoline plants during 1930, only one man in 22 being hurt in a minor degree, thereby proving that progress was being made in cutting down the accidents listed among the many plants each year.

Doctor Lederer commended the operators in the Ranger district for making a record showing in lack of minor and major accidents during the past year.

Papers read at the morning session covered the following topics: "Handling of Plant Materials," read by C. F. Wilson, of the Lone Star Gasoline Co., Dallas; "New Natural Gasoline Specifications," by E. W. Zublin, of the Texas Pacific Coal & Oil Co., Fort Worth; and "Operation of Fractionating Towers," by P. M. Raigorodsky, president and general manager of Petroleum Engineering, Inc., Tulsa, Okla. After each paper was given a general symposium was held at which time pertinent questions were asked in regard to the problems encountered by various operators and plant workers, in an effort to help solve these many problems. All three of the above men are specialists in their different lines of work in the gasoline or refining industry, and were especially capable of treating with the questions propounded to them.

A luncheon was held at the Thurber Club, the meeting convening again at 2 p.m. at which time other papers were read. L. B. Woods of the Phillips Petroleum Co. gave a paper on "The Operators Part in Production Costs"; R. L. Ponsler, of the Consolidated Gasoline Co., read a paper on "Operation of Field Lines and Drips"; H. S. Hefner of the Texas Pacific Coal & Oil Co. gave a paper on "Plant Operation"; and R. V. Burns, engineer, Lone Star Gasoline Co., talked on "Engine Room Operation." After all papers were read and discussions held on each paper the meeting was given over to a general discussion of the natural gasoline industry, this part of the meeting bringing out questions which were raised by problems which confronted the men in their various duties.

In the evening session from 8 to 9 p.m. a group of men connected with the several companies operating in the Ranger district formed what they call the "Tickville Band," which is generally called upon to entertain at various conventions and other meetings held throughout the district.

Upon adjournment of the evening session all that could stay and felt like participating in more fun attended a dance held in the Thurber Club. The family spirit which pervades in the Texas Pacific Coal & Oil Co.'s village at Thurber made this party a happy climax for the day's activities.

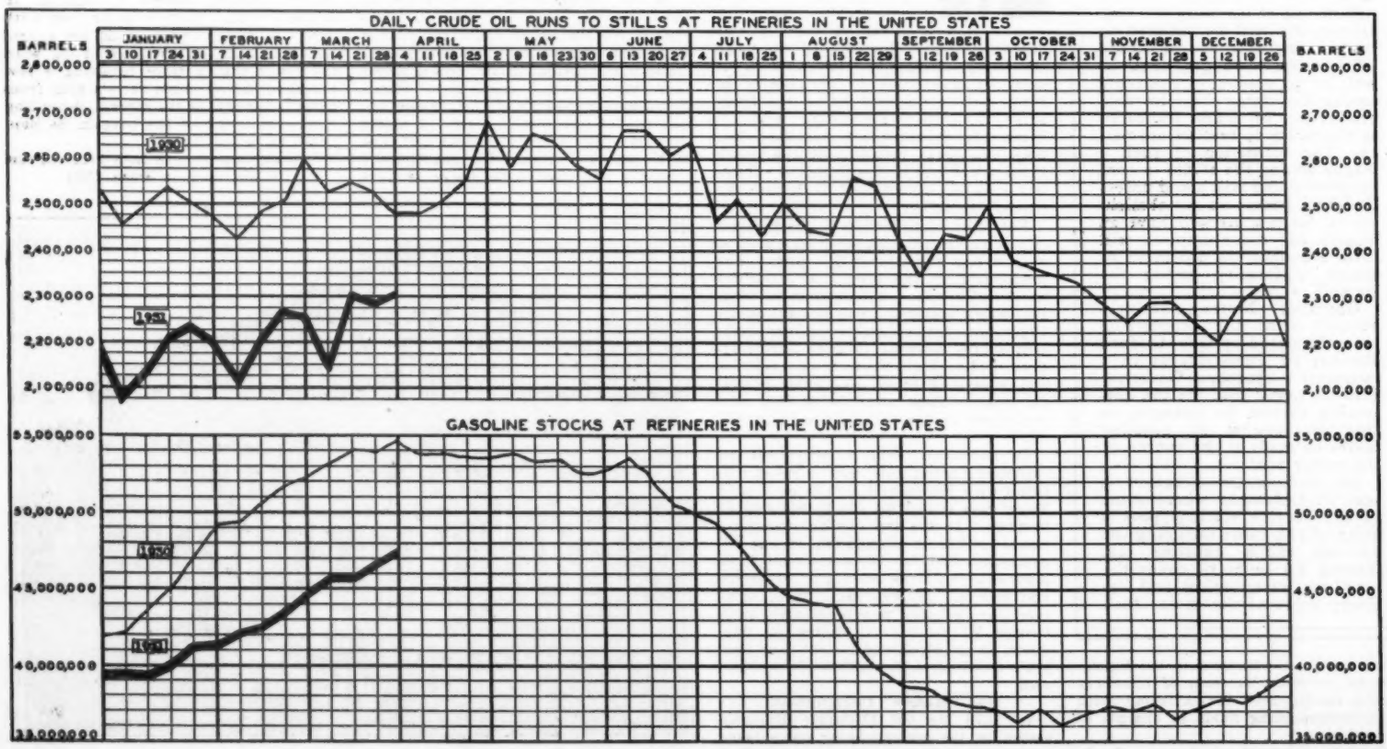
Dean Hiatt, superintendent of gasoline plants for the Texas Pacific Coal & Oil Co. was chairman of the program committee, and was mainly responsible for the splendid meeting of the association. C. L. Hightower, director of safety for the company assisted Mr. Hiatt with his preparations.

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending April 4.

	Week ending April 4, 1931				Week ending March 28, 1931				Week ending April 5, 1930			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	470,700	8,931,000	7,692,000	100.0	476,400	8,690,000	7,244,000	100.0	471,057	9,341,000	6,348,000
Appalachian	93.8	97,600	1,842,000	1,162,000	93.8	93,400	1,766,000	1,107,000	91.0	88,543	1,870,000	697,000
Indiana, Illinois, Kentucky	97.5	276,000	5,878,000	3,103,000	97.5	297,000	5,743,000	3,082,000	99.5	307,729	8,601,000	3,036,000
Oklahoma, Kansas, Missouri	89.4	232,700	3,484,000	3,709,000	89.4	257,000	3,468,000	3,727,000	89.1	300,429	4,506,000	3,593,000
Texas	91.9	491,700	7,871,000	8,339,000	91.9	549,400	8,088,000	8,096,000	90.4	544,700	7,869,000	10,868,000
Louisiana and Arkansas	98.3	141,700	2,081,000	2,334,000	98.3	143,400	1,994,000	2,254,000	96.8	168,557	2,765,000	2,031,000
Rocky Mountain	93.1	45,200	1,900,000	830,000	93.1	48,600	1,893,000	829,000	93.6	61,143	3,072,000	1,069,000
California	98.8	476,300	14,089,000	99,259,000	98.8	461,300	15,802,000	100,929,000	99.3	545,157	15,784,000	108,690,000
Total United States	95.7	2,231,900	46,076,000	126,433,000	95.7	2,332,400	47,444,000	127,268,000	95.6	2,632,171	53,808,000	136,332,000
Texas Gulf Coast	100.0	377,100	6,759,000	6,051,000	100.0	417,300	6,950,000	5,791,000	99.4	409,557	6,772,000	8,401,000
Louisiana Gulf Coast	100.0	95,000	1,921,000	1,346,000	100.0	100,900	1,805,000	1,213,000	100.0	103,386	2,412,000	1,225,000

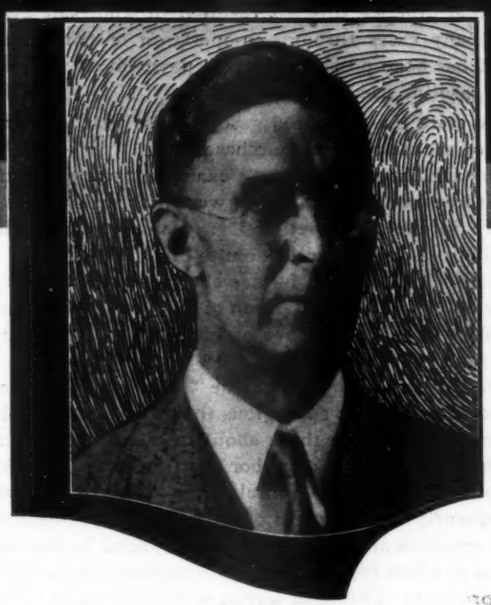
(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1931 based on weekly reports of the American Petroleum Institute. Data for 1930 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

TRANSIT'S

OPERATIONS



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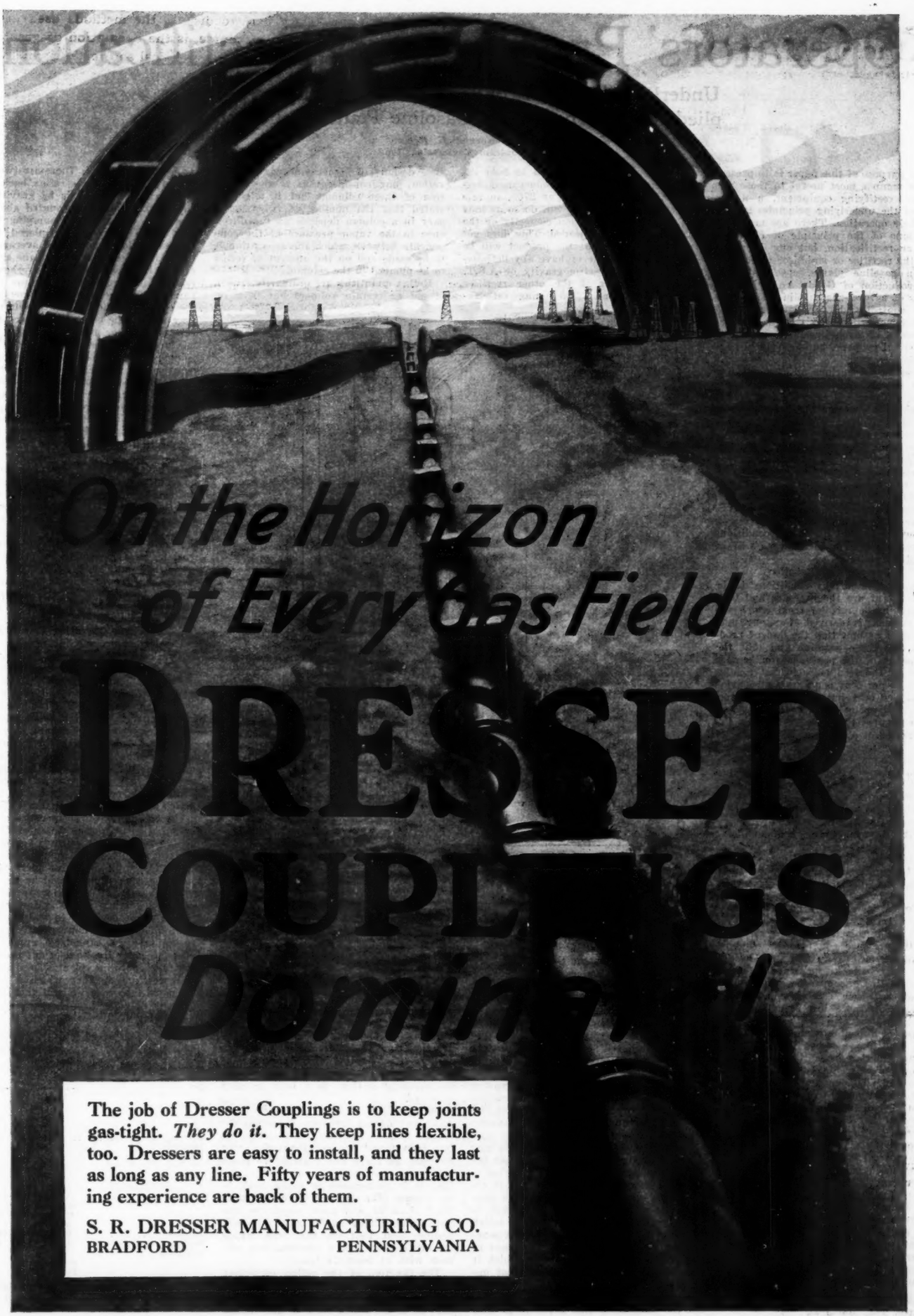
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Operators' Problems in Rectification

Underlying Principles of Fractionation Explained as Applied to Modern Natural Gasoline Plant Requirements

By Norman K. Rector
Petroleum Engineering, Inc.*

The purpose of this paper is to present, in the manner most useful to those who operate rectifying equipment, a discussion of the underlying principles governing their operation. There are many applications of the principle of fractionation, or rectification, but our discussion is of the rectifier or stabilizer in common use in gasoline plants, specifically for the production of Grade AA or similar grades of natural-gas gasoline. The method of control and operation to produce this product will be considered, omitting discussion of such special products as commercial propane, butane, solvents and the like.

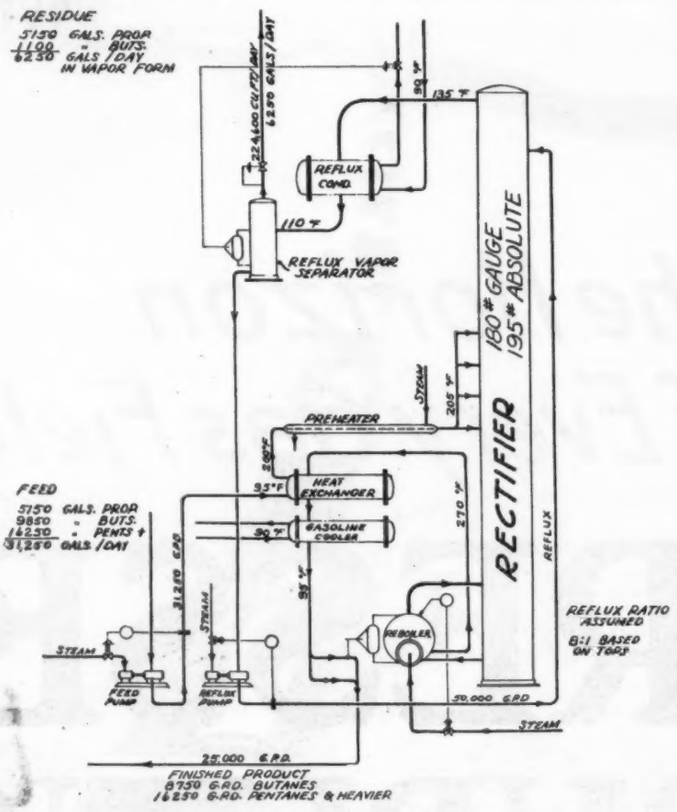
To make the various adjustments necessary for the efficient operation of rectifying equipment it is necessary to have a working knowledge of the underlying principles involved. To understand why it is necessary to have the operating conditions, such as temperature, pressures, etc., constant, it must be understood that the product of a rectifying unit is a constant vapor pressure mixture and that the rectifier does not deliver, necessarily, a product with a definite constant A.S.T.M. recovery or gravity. For this reason it is necessary that all of the conditions of operation remain constant as will be pointed out later.

Operation of Reboiler

The most important conditions to be kept constant are the pressure and temperature in the reboiler from which the final product is derived. For our purpose, let us assume that the desired product is AA grade gasoline and that the composition of the pentanes and heavier portion of the feed is such that a mixture of 65 per cent pentanes and heavier and 35 per cent butanes by liquid volume will give us this product. Let us further assume that this rectifier is being operated at a pressure of 180 pounds gauge. The temperature on the reboiler then will be a temperature sufficiently high to raise the vapor pressure of the desired finished product to 180 pounds gauge or approximately 195 pounds absolute which pressure, by the application of Raoult's law, may be calculated.

The total vapor pressure of the mixture will be the sum of the partial pressures of each of the constituents in the vapor in equilibrium with the mixture, therefore the reboiler temperature will be determined by assuming an approximate temperature based on former experience and then trying, by the use of Raoult's law, to see if this temperature will give us vapor pressure equal to the column pressure assumed. We could start by assuming the reboiler temperature and work directly to find the operating pressure, if this had not been established. In this particular case, we are assuming that our bottom product is to be a mixture of 65 per cent pentanes and heavier and 35 per cent butanes by liquid volume. On a mol-fraction basis the composition of this gasoline would be 43.1 per cent butanes and 56.9 per cent pentanes and heavier. The vapor pressure of butane (a mixture of iso and normal butanes) at 270° would be 360 pounds, the vapor pressure of the pentanes and heavier portion (assuming the average composition between normal hexane and normal heptane) would be about 70 pounds. Then 43.1 per cent of 360 pounds equals 155 pounds; 56.9 per cent of 70 pounds equals 40 pounds. The sum of the partial pressures; 155 pounds plus 40 pounds equals 195 pounds absolute or approximately 180 pounds gauge which was our operating pressure assumed.

It may be understood therefore that the function of the reboiler is to evaporate any excess butane and to hold the vapor pressure of the product to exactly 195 pounds absolute at 270°, in this particular case, and it will do so as long as the controls function correctly or the reboiler is not overloaded. This does not mean, however, that the product will be Grade AA gasoline or have any definitely established specific gravity or A.S.T.M. recovery for if the other rectifier equipment is not functioning satisfactorily or there is not sufficient butane to produce this vapor pressure, propane or even lighter fractions may be present in the finished gasoline.



Flow chart of modern rectification unit.

Fractionating Column

It is the function of the rectifier column to make the separation between the desirable and undesirable constituents in the feed. Most rectifier units are equipped with feed manifold, allowing choice of several different trays on which the feed may be injected to the column. The choice of the proper tray on which to place the feed is sometimes difficult and seldom correctly made. The temperature of the feed should be that temperature which will bring the vapor pressure of the mixture up to the column pressure. The feed should be injected to the tray on which the temperature is nearest this feed temperature. Most rectifier units are equipped with preheaters and the feed is heated a few degrees above the heat exchanger's outlet temperature. As a general rule no very great effort is made to determine the exact temperature at which the feed should enter but the temperature of the feed is generally matched to the temperature of the tray to which it is connected. This would be of great importance only when operating with the absolute minimum number of trays. It is not the purpose of this paper to go into the design of fractionating columns, rather, our consideration is the operation of these columns but it might be stated that the number of trays necessary in a column depends on the difference in the vapor pressure of the components between which the separation is to be made and on the amount of reflux to be pumped to the column.

Reflux quantities are ordinarily spoken of not as certain volumes but in a reflux ratio. The reflux ratio is generally based on the total amount of the overhead product in the liquid state. In other words, if we had a rectifier to which we pumped 35,000 gallons a day and obtained a product of 25,000 gallons a day, the overhead product would be the difference or 10,000 gallons a day and if we used a reflux ratio of 10 (10:1) the reflux quantity per day would be 100,000 gallons. To obtain a certain degree of fractionation it is necessary to use a larger reflux ratio if the number of trays is small and a smaller reflux ratio is necessary if there is a large number of trays.

Our problem is to separate the propane and lighter fractions from the desirable butanes and heavier fractions. It has been found in actual practice that at least 24 trays are required to make this separation with the amount of reflux it is economical to pump back to the column. The tendency is toward more trays than 24 and most companies are now standardizing on 30 trays. We will assume then, that the unit with which we are dealing has a fractionating column with at least 24 trays.

The function of the reflux condenser is to condense a sufficient amount of the waste products from the top of the column to be circulated back to the column as before mentioned. There are two methods of circulating this reflux back to the column; one method is by gravity with the reflux condenser mounted above column and the other by pumping the reflux with the condenser placed at any convenient location. In the average gasoline plant where all the propane and part of the butanes are taken overhead, the reflux will consist of a mixture of propane and butane; the top temperature of the column or the temperature on the top tray will be the temperature necessary to raise the vapor pressure of this reflux mixture to the operating pressure of the column and the control of this top temperature should therefore not be attempted in the operation of a unit. However, the top temperature is of vital importance because it indicates to us the approximate composition of the reflux, and the composition of the reflux depends on the composition of the overhead waste products.

In general the operator has little or no control over the original design of the equipment which he operates but he does have control over the temperatures and pressures at which the equipment is actually operated. We will assume that the unit is designed with a maximum working pressure sufficient to meet any need that may ordinarily arise. Most present-day equipment is designed for working pressure of around 250 pounds which is more than is generally needed in a natural gasoline plant.

Minimum Operating Pressure

The lowest pressure at which a rectifier unit may be operated is controlled by several factors. We assume that we are making a predetermined cut and consequently that the overhead product and reflux has a definitely established composition. With a given temperature of condensing water, we cannot operate at a pressure below which the reflux will condense. The temperature of this cooling water is, of course, the limit to which we may cool the tops for condensation. It is economically sound to approach only within a minimum of 5 or 6° of the cooling water temperature; therefore, if we had cooling water of 75° and plenty of condenser surface to cool the tops to 80° the minimum pressure at which this unit may be operated and make the desired cut would be the minimum pressure at which we could condense this reflux at 80°. Most rectifer units are not designed to make as close an approach as 5°, consequently, the operating pressure cannot go much below 150 pounds for the kind of cut needed in a natural gasoline plant. To determine the lowest pressure at which a certain system will operate we will take an example.

Assuming feed consisting of:

	Liq. vol. charge	Liq vol. product gallons
Propane	5,150	0
Butanes	9,850	8,750
Pentanes	16,250	16,250
	31,250	25,000

	Liq. vol. residue cu. ft./gal.	Cu. ft. residue
Propane	5,150×37=	190,500
Butanes	1,100×31=	34,100
Pentanes	0	0
	6,250	224,600

	Vapor volume % tops= Mol. %	V.P.@ 110°F. (from V. P. chart)
Propane	34.8%	192 lbs.
Butane	15.2%	65 lbs.
Pentanes	0	
	100.0%	

Assuming a pressure of 100 pounds absolute on the condenser, the partial pres-

(Continued on Page 129)

*Presented before gasoline plant operators at Thurber, Tex., March 31.

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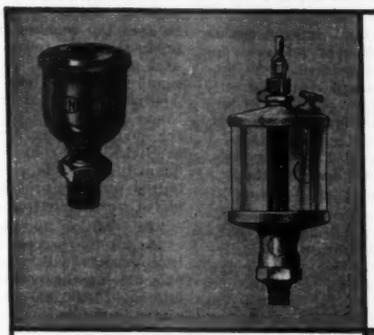

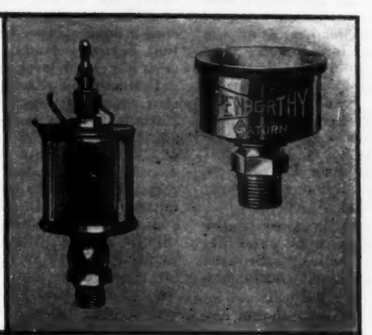

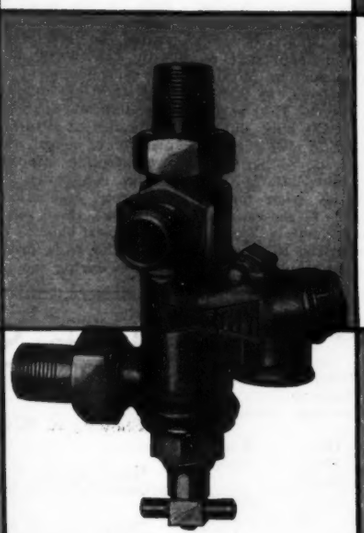

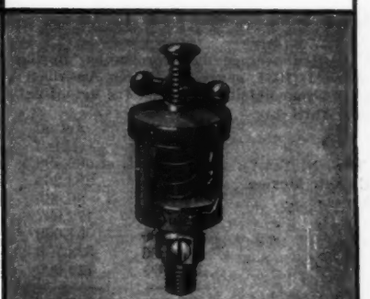

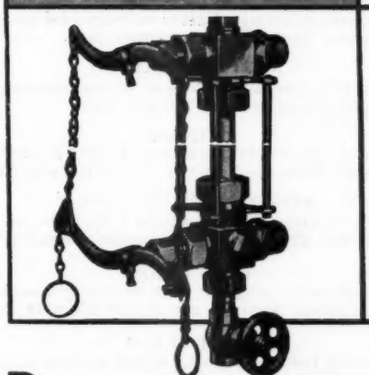

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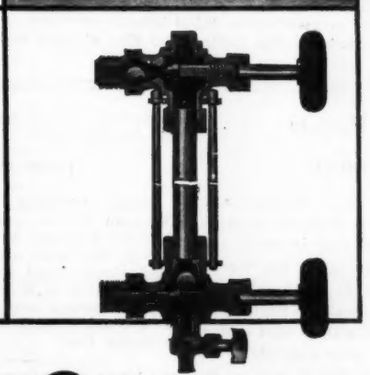

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Committee on Economics Makes Report

Estimated Demand and Supply of Crude Oil and Refined Products for Next Six Months Given to Secretary Wilbur

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 7.—The voluntary committee on petroleum economics today made a preliminary report to Secretary Wilbur, chairman of the Federal Oil Conservation Board. The committee consisted of E. B. Swanson, chief economist, United States Bureau of Mines, chairman; John W. Frey, Bureau of Foreign and Domestic Commerce; Martin Van Couvering, petroleum engineer, Los Angeles; Alfred G. White, National Industrial Conference Board, New York City, and Howard Bennette, Western Petroleum Refiners Association.

This report relates to the approximate crude oil and gasoline supply and demand for the period April 1 to September 30, 1931. The principal conclusions are as follows:

"The American oil industry should not anticipate during the period under consideration, a total gasoline demand in excess of 252,000,000 bbls., a decline of 0.8 per cent from the total gasoline demand of 254,108,000 bbls. during the corresponding period of 1930. A relatively small increase may be expected in domestic demand, but it is probable that a decrease in shipments to other countries will more than offset it. Domestic demand during the period is estimated at 222,800,000 bbls., an increase of 1.5 per cent over the domestic demand of 219,589,000 bbls. during the same period of the preceding year.

The committee estimates that local demand during April and May will not equal that of the corresponding months of 1930, that the 1930 levels will be exceeded during June, July and August, and that domestic demand will again decline from the 1930 level during September.

Estimates of gasoline shipments to foreign countries indicate an export of 29,200,000 bbls., as compared with 34,519,000 bbls. during the corresponding period of 1930, shipments in each of the six months being under those of the corresponding months of 1930. The committee includes in these estimates the quantity of unblended natural gasoline shipped from California ports to foreign countries. With regard to total demand for gasoline, or motor fuel, the committee estimates that 1930 levels will be exceeded only during July and August, the remaining four months showing varying declines from the corresponding figures of the preceding year.

Imports.—Estimates indicate that receipts of gasoline from foreign refining centers will be reduced from the 9,863,000 bbls. received during the 1930 period to approximately 6,600,000 bbls. during the six months' period of 1931, a decline of 3,263,000 bbls., or 33 per cent. A similar study of reliable data relative to receipts of crude oil from foreign producing countries leads to the estimate that the total of approximately 33,000,000 bbls. received during the 1930 period will be reduced to approximately 30,000,000 bbls. during the 1931 period, a reduction of 3,000,000 bbls., or 9 per cent.

Gasoline Stocks

In the absence of final data, stocks of gasoline held in storage at refineries on April 1 have been calculated to be 48,000,000 bbls. The committee has estimated that an inventory objective of 30,600,000 bbls. for stocks on September 30, therefore would require a net withdrawal from gasoline stocks of 17,400,000 bbls. during the period under consideration.

Gasoline Supply

To meet the estimated total domestic and foreign motor fuel demand of 252,000,000 bbls., the committee anticipates the receipt of 6,600,000 bbls. from foreign sources and the withdrawal of 17,400,000 bbls. from storage, leaving 228,000,000 bbls. as the quantity which should be produced at domestic refineries and plants during the 1931 period. This corresponds with 227,260,000 bbls. produced during the same period of 1930. It is estimated that 3,860,000 bbls. will be supplied from miscellaneous sources (the production of motor fuel at natural gasoline plants, the addition of benzol, and the unblended natural gasoline shipped from California to foreign countries). Subtracting this miscellaneous production from the total requirement, there remains the quantity of 224,140,000 bbls. as the indicated amount of gasoline to be produced at domestic refineries during the period.

Following a careful analysis of recent trends in gasoline recovery in each of the refining districts, the committee has reached the conclusion that the average production of gasoline, including the natural gasoline blended at refineries, will equal 48.365 per cent of the crude run. Applying this ratio to the estimated refinery production of 224,140,000 bbls., the committee has arrived at the figure of 463,434,000 bbls., as the estimated quantity of crude oil which will be required in the production of the estimated gasoline output.

"In addition to the requirements of crude oil for processing, it is estimated that exports will amount to 13,000,000 bbls. during the period and that an additional 15,000,000 bbls. may be represented in the consumption of crude oil directly as fuel; in crude oil transferred to fuel oil stocks; and in losses in handling. The addition of these separate needs leads to the figure of 491,434,000 bbls. as the total estimated crude oil requirement during the period under consideration. Deducting the estimated crude imports of 30,000,000 bbls., there remains the quantity of 461,434,000 bbls. as the estimated total requirement of domestic crude oil during the period.

Average Daily Requirement

"The estimated total requirement of domestic crude oil, 461,434,000 bbls, rep-

(Continued on Page 132)

SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States from October 1, 1930, to April 1, 1931, suggested by the American Petroleum Institute's special committee on the economic situation, and the actual daily average production during the week ending April 4:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
Okla., Kans., S. W. Tex., N. Tex.*	953,700	1,009,496	55,796	.....
West Texas and S. E. New Mexico	316,300	283,263	.....	33,037
North Louisiana-Arkansas	86,400	86,435	35	.....
Gulf Coast	177,800	172,997	.....	4,803
Rocky Mountain	58,600	57,069	.....	1,531
California	530,100	523,750	.....	6,350
Other fields	110,600	110,000	.....	600
Total	2,233,500	2,243,010	55,831	46,321

Net average daily overproduction, 9,510 bbls.

*North Texas includes North, Central and East Central Texas and Texas Panhandle.

Late Fields

OKLAHOMA

Lippa and others' No. 1 Phillips, SW cor. SE Section 8-9-6, Seminole County, Oklahoma, had 1,500 feet of oil in the hole from the Wilcox sand. The top of the sand was found at 4,218 feet, the first oil at 4,235 feet and the total depth 4,242 feet. The well will be shut in for 16 days under the proration plan. It may open another producing area or be an extension to the East Earlsboro Pool, as it is located about five-eighths of a mile northeast of production in that pool.

KANSAS

Miller and the Shell Petroleum Corp.'s No. 1 Blair, NW cor., Section 32-19-1w, McPherson County, Kansas, was shot with 40 quarts at 3,445-55 feet after being plugged back from a total depth of 3,474 feet. The oil rose 500 feet in the hole in 30 minutes and 2,750 feet in 3 hours. The well extends the deep sand production a half mile southwest from the discovery well.

EAST TEXAS

FORT WORTH, Tex., Apr. 7.—Devonian Oil Co. and Gulf Production Co.'s No. 1 Motley in the William Killen Survey, 1½ miles northeast of Overton, Rusk County, and 2½ miles southwest of production in Kilgore Pool, cored 11 feet of saturated sand from 3,652-63 feet. It is 5 miles north of nearest producer in Joiner Pool.

RALPH O. DIETLER JOINS STANOLIND ORGANIZATION

Ralph O. Dietler, formerly assistant to the president and a director of the Midwest Refining Co. of Denver, Colo., was made a vice president of the Stanolind Crude Oil Purchasing Co., according to the announcement by R. S. Ellison, president of the company.

Mr. Dietler succeeds E. B. Marlow, resigned to return to the Sinclair Oil & Gas Co. He has been connected with the Midwest Refining Co. for a good many years.

High Spots in Field News

MICHIGAN

Showing in Missaukee County wildcat.

NORTH LOUISIANA-ARKANSAS

Good gasser in Richland Parish. Eleven other completions in district include eight dry holes.

NORTH TEXAS

Deep test in Archer County estimated 300 bbls. from new sand to be given several shots at various depths.

OKLAHOMA

Potential gauges keep up production. Work completed in Seminole and begun in Oklahoma City. Gushers hold up well.

CALIFORNIA

Pessimism in state softening. Effort to negotiate satisfactory sales for crude making progress. Lost Hills curtailment plan.

SOUTHWEST-TEXAS

New pool opened in Jim Wells County. South extension of Schoolfield-O'Byrne Pool extended half mile by 750-bbl. well.

KANSAS

Ritz-Canton wells are steady producers. Potential tests indicated higher output than estimated. New producers in Ellsworth and Rice Counties.

ROCKY MOUNTAIN AREA

Big Muddy well of Ohio Oil Co. swabs 1,000 bbls. in 40 hours. Lakota sand discovery on Dry Creek increases output. Greasewood program still waiting.

GULF COAST

Second deep sand underlying the salt overhang found at Barbers Hill. Pierce Junction extended. Revived activity at Humble indicated. Orchard Dome extended.

WEST TEXAS

Largest well in Big Lake Pool to be killed in view of general conditions and to assist the commission on proration.

Cochran County test abandoned.

Tom Green County's deep test was abandoned.

EAST TEXAS

Gregg County well probable 4-mile western extension of Lathrop Pool.

Three-mile extension test from Kilgore Pool not yet commercial well, but another core to be taken. Well 3 miles north of Kilgore makes 600 bbls. in first hour.

Dry hole in Upshur County marks northern limits of production.

Gulf Production Co. brings in best well of week in Kilgore Field, and so far the best well in the three East Texas Pools. It flowed at a rate of better than 41,000 bbls. a day in 30-minute period.

Production of the three pools is running over 175,000 bbls. a day. Some 55 locations were reported for the week.

Potential Gauges Keep Up Production

Work Completed in Seminole Area but Was Immediately Begun in Oklahoma City Field. Gushers Hold Up Well

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's crude oil output for the week ending April 4 shows a decline of approximately 41,000 bbls. per day from the preceding week. The daily average for the seven days ending April 4 was 511,000 bbls. The decline of the State's production was in the Greater Seminole area where the umpire completed the new potential gauges last week. The gauging of the Oklahoma City Field, for new potentials started April 1 and the work may be completed by the middle of the month. During the first two weeks of April the State's daily average is expected to show a large increase. During the last week production of the Oklahoma City Field reached a new peak when the daily gauge was 234,000 bbls. in 24 hours. On another day the field made 221,000 bbls.

During the first three months of this year major oil companies and operators have been reducing rentals and reducing wildcat acreage in the western and northwestern part of the State. It is believed the majority of these leases have from five to nine years yet to run.

Many Leases Surrendered

A survey compiled from records in the different counties in the northwestern part of the State indicates that more than 81,000 acres of leases have been surrendered since the first of the year and it is believed this figure does not represent the total but is indicative of the amount of work that is under way. In addition to surrendering leases, the companies are reducing rentals to 25 and 50 cents an acre. This move is expected to save the industry several million dollars a year. Indications are that the old method of paying a dollar a year rental for wildcat acreage will not be reestablished for some time to come as most of the acreage under lease in the north and northwestern part of the State has from seven to nine years to run.

Counties included in the survey were Woods County, which has lost approximately 16,500 acres since the first of the year; Woodward County, with 11,000 acres; Noble County, 10,000 acres; Logan and Kay Counties, 9,000 acres each, and the work is only partially completed. Other counties show a reduction as follows: Kingfisher County, 1,700 acres; Grant County, 5,750 acres; Garfield County, 4,200 acres; Major County, 2,400 acres; Alfalfa County, 1,000 acres; Payne County, 7,000 acres; Harper County, 1,100 acres.

Wildcat operations have been delayed while the work has been in progress and the Oklahoma Panhandle is without an operation at the present time, but considerable work is expected to be started in Texas County this spring. Additional gas production may be added to the southern part of the Hugoton gas field with the completion of the interstate gas pipe lines.

More tests are expected to be started in Harper County in the vicinity of the Sinclair Oil & Gas Co.'s gas well in Section 14-26-24w, which was completed last fall. Other tests may be started in northern Oklahoma and Logan Counties during the summer. Many express the opinion a pool may be developed in the vicinity of the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s producing well in Section 32-14-4w, Oklahoma County, and around the Eason Oil Co.'s producing well in Section 34-17-4w, Logan County. Both are wildcats and the only wells in the area.

Oklahoma City Completions

Wells completed in the Oklahoma City Field during the week were as follows: Anderson-Prichard Oil Corp. and others' No. 1 Payne, NW cor. SE SE Section 3-11-3w, flowed 4,618 bbls. in four hours from the Wilcox sand at 6,308-6,403 feet. The gas was estimated at 25,000,000 feet a day. Phillips Petroleum Co.'s No. 1 Othenin, SW cor. NE NE Section 3-11-3w, flowed 7,590 bbls. a day in three hours and 45 minutes from Wilcox sand at 6,441-46 feet. The gas was estimated at 45,500,000 feet a day. The connections started to cut out and the well was shut in to replace the old connections. Phillips Petroleum Co.'s No. 1 Johnson, NW cor. SW SE Section 3-11-3w, flowed 4,923 bbls. of oil in four hours from sand at 6,294-6,422 feet, through a 4-inch choke with 200 pounds back pressure. The gas was estimated at 36,500,000 feet a day. Westgate Oil Co. and others' No. 1 Wilson, NE cor. SW NW Section 10-11-5w, flowed 5,082 bbls. of oil in four hours from the Wilcox sand at 6,400-6,550 feet. The gas was estimated at 32,000,000 feet a day.

Oklahoma City Production

The Oklahoma City Field produced a total of 3,977,012 bbls. of oil during the month of March, a daily average of 128,291 bbls.; of this amount 3,867,057 bbls. was from the older wells and the balance 109,955 bbls. was from wells completed during the month.

On April 1, 70 wells in the Oklahoma City Field were given potential tests and the field produced 76,796 bbls. of oil. The second day the field produced a new peak in production with 234,786 bbls. from 92 wells. The pipe lines took 130,995 bbls. of oil from the field on the same day, leaving the balance of 90,791 bbls. in field storage.

During the month of March the pipe line companies and tank cars moved a total of 4,086,599 bbls. of oil from the Oklahoma City Field, a daily average of 131,825 bbls. This amount is also a new peak shipment from the field. Practically every pipe line company moved a larger volume of oil during the first half of the month.

Four-Hour Gauges

Potentials being taken in the Oklahoma City Field indicate little change from the previous ones taken in early January. The following wells were open the first day for the four-hour gauges: The Sunray Oil Co.'s No. 1 Donovan, SW cor. SE, Section 34-12-3w, inside the city limits, shows the largest potential of the first 280 wells tested up to April 4. The well made 11,453 bbls. of oil the first four hours. Anderson-Prichard Petroleum Corp.'s No. 1 Gibbons, 546 bbls.; same company's No. 1 Pest House, 879 bbls.; same company's No. 1 Roosevelt, 1,194 bbls.; Phillips Petroleum Co.'s No. 1 McAusland, 8,703 bbls.; No. 1 Black, 8,845 bbls.; No. 1 Day, 9,999 bbls.; No. 1 Ball, 2,164 bbls.

Indian Territory Illuminating Oil Co. had the following wells open for the four-hour potentials, No. 1 Funk, 1,405 bbls.; No. 1 Lemmon, 22 bbls.; No. 1 Spannagle, 3,357 bbls. No. 1 Elizabeth Theimer, 2,303 bbls.; No. 8 Trosper, 889 bbls.; No. 1 Viewpoint, 4,302 bbls.; No. 4 N. Emerson, 4 bbls.; No. 3 Oklahoma State, 3,398 bbls.; No. 4 Oklahoma State, 3,130 bbls.; No. 2 Mary Sudik, 2,784 bbls.; No. 6 Mary Sudik, 2,769 bbls.; No. 1 Unsell-Krager, 1,549 bbls. Wirt Franklin Petroleum Corp. had the following wells open for a four-hour gauge: No. 11 Lowery, 1,470 bbls.; No. 3 Lowery, 2,967 bbls.; No. 1 B. Theimer, 3,778 bbls.; No. 10 Theimer, 440 bbls. Cromwell-Franklin Oil Co.'s No. 8 Trosper Park made 1,010 bbls.; No. 10 Trosper Park, 1,366 bbls.

Skelly Oil Co.'s No. 8 Hoopes made 97 bbls.; No. 2 Ainsworth, 470 bbls.; No. 4 Ainsworth, 801 bbls.. Coline Oil Co.'s No. 1 Olds, 198 bbls.; No. 2 Olds, 324 bbls.; No. 10 Clauer, 151 bbls.; No. 11 Clauer, 675 bbls. Mid-Kansas Oil & Gas Co.'s No. 1 Mollman, 362 bbls.; No. 3 Mollman, 713 bbls.; No. 1 Fortson, 339 bbls.

Chatham Oil & Gas Co.'s No. 1 Eckroat made 8,593 bbls.; Sinclair Oil & Gas Co.'s No. 3 School Land-54, 484 bbls.; No. 12 School Land-54, 2,843 bbls.; No. 3 Vincl, 325 bbls.; No. 16 Vincl, 5,170 bbls.; Shell Petroleum Corp.'s No. 1 Egermier, 657 bbls.; No. 5 Petty, 18 bbls.; No. 6 Petty, 225 bbls.; Prairie Oil & Gas Co.'s No. 3 Hiddleston, 1,085 bbls.; No. 6 Hiddleston, 860 bbls.; No. 4 Sigmon, 1,036 bbls.; British-American Oil Co.'s No. 4 Holmes, 8,517 bbls.; No. 6 Holmes, 8,291 bbls.; Empire Oil & Refining Co.'s No. 1 Gustin, 289 bbls.; Tom Slick Oil Co.'s No. 3 Hoopes, 576 bbls.; No. 4 Hoopes, 419 bbls.; No. 3 Campbell, 8,980 bbls.; Jones Brothers Drilling Co.'s No. 1 Sullivan, 3,020 bbls.

Promising Wildcat

The wildcat test of Peters Petroleum Corp. and others' No. 1 Hayes, NW cor. NE NW Section 24-28-3, in Kay County, was looking favorable for production. It had 600 feet of oil in the hole from the Bartlesville sand at 3,300 feet. The test is located northeast of the Mervine Pool in the eastern part of the county. If the test makes a commercial producer it will extend production a mile and a half northeast.

In the Perry district of Noble County, Twin State Oil Co.'s No. 1 Stewart, SE cor. NE Section 5-20-1w, was completed for 12,000,000 feet of gas a day, and shut in. The sand was found at 3,394-3,407 feet.

In southern Oklahoma, Grady County reports a gas well. J. V. Nichols' No. 1 Denton, NE cor. Section 35-4-8w, was completed for 17,500,000 feet of gas a day from sand at 1,920-38 feet. The 8-inch casing was landed at 1,919 feet.

Little activity is reported from Stephens County, the Carter Oil Co.'s No. 1 Florence, NW cor. NE Section 11-3s-6w, southeast of the Comanche townsite, and a wildcat which will be drilled to the Wilcox sand was reported drilling at 1,500 feet. Crane and Rankin's No. 1 Adkins, NE cor. NE SE Section 14-1-9w, a wildcat north of the Oil City Field, has found a hard lime at 3,255 feet, which may be the Arbuckle lime. George Pace's No. 7 Bush, NW cor. NE SE NE Section 3-2s-8w, in the Empire Field, Stephens County, is shut down with a showing of oil found at 1,593-1,637 feet. The showing is estimated at 6 bbls.

Madill's Shallow Field

The shallow area near Madill in Marshall County is expecting several new completions. The Poor Boy Oil Co.'s No. 2 Null, SW cor. NW Section 24-5s-5, has landed and cemented casing on top of an oil showing found at 730-40 feet. Magnolia Petroleum Co.'s No. 1 Dilley, SE cor. NW SE SE Section 30-5s-6, an old well drilled deeper to a total depth of 775 feet, was plugged back to 575-85 feet, where the operators will shoot and test a showing of oil. One of the deepest tests in the area is D. H. Curry's No. 1 Ward, NW cor. SW SE Section 14-5s-6, a wildcat 6 miles northeast of the Madill Field, was fishing for tools at a total depth of 1,903 feet. Industrial Oil & Gas Co.'s No. 1 Sharp, NE cor. SE NE Section 17-6s-5, 6 miles southwest of the Madill Field, was drilling at 625 feet, after landing 552 feet of 8-inch casing. In the southern part of the county, Mccrory and McCrory's No. 1 Little, NW cor. SW Section 30-7s-6, a wildcat, was drilling at 350 feet.

Serious Water Intrusion

The presence of water in practically all the producing wells in the Wewoka townsite pool, indicates the limits of the producing area may have been defined. The development work in the area is about completed. Only one producing well in the field is not making water, the Mid-Kansas Oil & Gas Co.'s No. 3 Davis, SE cor. NE NW, Section 30-8-8. The same company's Davis lease with four completed wells producing from the pleted wells shows an accumulative recovcovery to April 1 of approximately 345,000 bbls. The entire pool with 19 completed wells shows an cumulative recovery of approximately 700,000 bbls. to April 1, with the Mid-Kansas Oil & Gas Co.'s Davis lease yielding about half of the oil recovered from the area. The discovery well in the pool, Deep Rock Oil & Refining Co.'s No. 1 Whitworth, NW

(Continued on Page 105)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Drlg. 5,355 ft.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Drlg. 2,000 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	Shut down 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Shut down 2,880 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Shut down 4,665 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	Shut down 1,115 ft.

COAL COUNTY

McGraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	Drlg. 750 ft.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Shut down 760 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 9-3-10w	Shut down 2,282 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,850 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	Rig on ground.

GREER COUNTY

French's No. 1 Murphy, SW NW Sec. 23-7-21w	Shut down 1,490 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w	Shut down 2,593 ft.

(Continued on Page 134)

The cracking plant today is the heart of a refinery—not just an afterthought or an incident

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Ritz-Canton Wells Steady Producers

Potential Tests Indicate Higher Production Than Estimated. New Producers in Ellsworth and Rice Counties

By W. A. Spinney
Staff Correspondent, Kansas Fields

New producing wells and new locations are steadily increasing the activity in the Ritz-Canton area in McPherson County, central Kansas. The taking of new potential gauges is proceeding in the area with indications that all producing wells will be tested by the middle of the week.

It is estimated a potential of 35,000 to 40,000 bbls. a day from the chat and Viola horizons will be shown by the current production tests of the field, which may be greater than was first expected. An example of the steady production from the Viola lime horizon is the discovery well, Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, SW cor. NE, Section 30-19-1w, completed several months ago with an initial production of 3,500 bbls. a day. It produced at the rate of 3,885 bbls. a day in the present potential tests. The three offsets have been producing for some time.

The estimated production for the State during the seven days ending April 4, was approximately 108,600 bbls. a day, a decline of 1,000 bbls. a day from the previous week.

The most recent extension to the deep sand production in the Ritz-Canton area advanced the producing area a half mile to the northeast from the discovery well, and is the first to be completed in that direction. United Petroleum Co. and others' No. 1 Smith, NW cor., Section 29-19-1w, on Shell Petroleum Corp.'s acreage, found oil in the Viola at 3,415-21 feet, where oil rose 1,700 feet in one hour, and was slopping over the top of the hole in five hours. The 5-inch casing is being landed and tankage is being erected preparatory to making a production test.

New Well in Welch Pool

Another well was added to the Welch Pool, in southeastern Rice County during the week. Phillips Petroleum Co. and Twin Drilling Co.'s No. 1 Miller, SW cor. NE, Section 3-21-6w, flowed 100 bbls. of oil in 1 hour and 15 minutes from the chat at 3,362-80 feet. It was given another production test the next day and made 226 bbls. of oil in 9½ hours. During the second production test the well flowed through 2,000 feet of 2-inch tubing to the stock tanks and it was then shut in. The well offsets a recent completion by Rogers and others.

The townsite of Cunningham, in Kingman County, is to be tested for gas production. L. D. Davis is expected to drill a test well in the next 60 days and if a commercial well is found, he has 90 days to begin laying lines to distribute gas, according to the terms of the franchise granted to supply gas to the town for domestic consumption. A test drilled by the Skelly Oil Co. northwest of Cunningham, found a showing of gas at 1,600 feet, 2,000 feet, and 2,130 feet.

Keys Petroleum Co.'s No. 13 Mills, SW cor. SE C, Section 33-13-15w, Russell County, made 40 bbls. from the Oswald lime at 3,070-3,109 feet. The test was drilled to granite at 3,297-3,306 feet, and plugged back to the Oswald.

The most recent well to be completed in the Eastborough Pool, in Sedgwick County, was Eisenhour Brothers' No. 1 Hords, C SE NW, Section 19-27-2, made 70 bbls. of oil and 3 bbls. of water from the chat at 2,981-85 feet when completed.

Hugoton Gas Field

Gas from the Hugoton Field in the southwestern part of Kansas has been selling for approximately 5 cents per 1,000 feet at the well. Very little gas, except that being used for local consumption and run to lines supplying gas to towns in a few western Kansas counties has been taken from the wells during the winter. The majority of the 115 gas wells completed in the field are shut in. These wells have an estimated potential open flow of 700,000,000 feet a day.

The two interstate gas pipe lines under construction from the Texas Panhandle are routed through the Hugoton gas field, with destinations at Chicago, Des Moines, Milwaukee, Omaha and other cities in the Middle West are expected to be completed by January 1, 1932. When completed these lines will get part of their gas supply from the Hugoton gas field. More gas than is now available will be needed to meet the demand and new development is expected to begin in the area early this spring. The new work includes the drilling of wells in Stevens, Morton, Grant, Stanton Counties, Kansas, and Texas County, Oklahoma.

Many are of the opinion the flanks of the structure may yield oil but as yet none has been found in the area. A deep test is drilling in the western part of Stevens County. The test is Argus Production Co.'s No. 2 Christopher, C NE, Section 10-33-39w, and was at 5,147 feet on the last report. It is the deepest test in the Hugoton Field and it is expected to be drilled to the Simpson sand formation.

The Ellsworth Arch

The recent finding of oil on the Ellsworth arch indicates the central western part of the State may prove to be a large producing area. A 40-mile trend extending from southeastern Russell County and southwestern Ellsworth County, on the north and extending south across parts of Rice and Barton Counties into Stafford County, has enormous possibilities. During the last year several wells have been completed in the area which has tended to confirm the geological data which indicated the presence of oil-bearing formations.

Two Good Wells

Two recent discoveries, one in Ellsworth and one in Rice County, are important additions to the recent discoveries. Alyward, Tack and Allshouse's No. 1 Stratman, SE cor. NW SE, Section 1-17-10w, Ellsworth County, is estimated at 1,000 bbls. a day from the Silicious lime at 3,255-60 feet. In Rice County, Hinkle, Stark and Cress' No. 1 Sharp, SE cor. NE, Section 13-20-10w, is also estimated at 1,000 bbls. a day from the Silicious lime at 3,330-36 feet. Both wells filled up and slopped over. As neither well has any promise of a pipe line connection both will probably be shut in, like the Tatlock, Shell Petroleum Corp.'s No. 1 Heiken, in southwestern Ellsworth County, another wildcat well estimated at 2,000 bbls. which is shut in.

All of the present producing wells found along the Ellsworth arch are productive from the Silicious lime. The area now extends from the Stanolind Oil & Gas Co.'s No. 1 Richardson well in Stafford County to the recent well of Aylward, Tack and Allshouse, No. 1 Stratman, in Ellsworth County. The trend crosses the southwestern part of Rice County, the distance being about 40 miles. It is not believed the entire distance will be found productive but that local structures on the Ellsworth arch at various points may produce. The few wells that have been completed to date have logged about the same and the limits of the producing area has not been defined and may extend to the north and south.

Many express the opinion the area has future possibilities and may result in one of the largest producing areas in the State. In the area 11 different oil discoveries have been made, extending through Stafford, Rice, Ellsworth, Barton and Russell Counties. The main trend appears to be northeast, southwest and a cross trend appears coming from the northwest to the southeast, starting in Russell County.

The second test in Stafford County and offsetting the Stanolind Oil & Gas Co.'s No. 1 Richardson, was spudding. Henry Rosenthal and others' No. 1 Gray, in Section 11-24-3w, is starting the test.

Another wildcat test located along the Ellsworth arch is the Gilmore Oil Co.'s No. 1, in the SW cor., Section 31-17-9w, Ellsworth County. The test was underreaming the 10-inch casing at a total depth of 2,450 feet. It is located southeast of the Tatlock, Shell Petroleum Corp.'s No. 1 Heiken, in the same county, and is believed to be running favorably on structure.

New work in Kansas for the week ending March 28 was delayed by the cold weather and a snowstorm over the entire State which blockaded the highways with snowdrifts.

In the Older Areas

T. K. Simmons' No. 1 Winegar, NW cor. SW Section 27-23-11, Greenwood County, near the south end of the Seeley Pool, swabbed 75 bbls. of oil the first 24 hours after a 120-quart shot. The well is producing from the Bartlesville sand at a total depth of 1,944 feet. Phillips Petroleum Co. and others' No. 1 Edwards, NE cor. SE NE Section 35-24-10, Greenwood County, is a location.

Two Cowley County operations are expected to be completed in a few days. McDaniel and Blubaugh Brothers' No. 1 Carlyle, SE cor. SW SE Section 35-34-3, Cowley County, found a showing of oil in the Stalnaker sand at 1,950 feet and is landing casing at 1,915 feet preparatory to drilling deeper. T. Fine's No. 1 Boyd, in Section 32-32-4, was drilling at 3,120 feet.

Derby Oil Co. and Empire Oil & Refining Co.'s No. 1 Domsch, NE cor. NW Section 6-20-1w, swabbed 679 bbls. of oil in 13 hours. After being drilled deeper to 3,418 feet, it swabbed 464 bbls. in five hours. It was shut down waiting for a pipe line connection. The well extends the deep sand production a location to the south.

Tidal Oil Co. and others' No. 1 Day, SW cor. NW SW Section 32-19-1w, a semiwildcat test, topped the chat at 2,937 feet, with no oil showing, and was underreaming the 6-inch casing. The test is located a half mile east of production in the Ritz-Canton area.

Stearns & Streeter, United Petroleum Co. and Shell Petroleum Corp.'s No. 1 Blair, NW cor. Section 32-19-1w, found water in the Simpson sand at 3,476 feet and will be plugged back to the Viola lime at 3,431-72 feet. A showing of oil was found in the Viola and it may be given a shot. The Simpson sand was only penetrated 1 foot when the water rose in the hole.

Bids will be asked by the State of Kansas for oil and gas leases on the river bed of the Arkansas River, in two sections near Gueda Springs, Cowley County. The acreage is located in Sections 8 and 9, Township 33-3. The executive council is offering the acreage to the highest bidder.

Greenwood County

Smith and others made location for No. 2 Hess, SW cor. NE, Section 34-22-11. Phillips Petroleum Co. staked location for No. 7 Beal, SE cor. NE, Section 28-23-11. Gore and others made location for No. 1 Smith, SW cor. NE, Section 6-24-12. Smith and others' No. 1 Hess, NW cor. SW NE, Section 34-22-11, has been completed for 10 bbls. in sand 1,883-1,917 feet. Polhamus and others' No. 1 Smith, SE cor. NE SW, Section 7-24-11 is dry and abandoned at 1,955 feet.

Lyon County

Griffith and others' No. 1 King, NW cor., Section 8-19-10, is dry and abandoned at 2,695 feet.

McPherson County

Derby and Empire Oil & Refining Co.'s No. 1 Domsch, NE cor. NW, Section 6-20-1w, made 925 bbls. in 12 hours from Viola lime 3,406-18 feet.

Rice County

Twin Drilling Co. and Phillips Petroleum Co.'s No. 1 Rice, SW cor. NE, Section 3-21-6w, has been completed for 200 bbls. shut in, after flowing 226 bbls. in nine hours from chat 3,362-80 feet.

Sedgwick County

Eisenhour and others' No. 1 Horde, SW cor. SE SE NW, Section 19-27-2, made 210 bbls. in chat 2,981-84 feet.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Boertz, NW SE SE Sec. 13-18-12w	Shut down 1,820 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 2,065 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.
CLAY COUNTY	
Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.
COFFEY COUNTY	
Heyburg's No. 1 Kroft, SE SW SE Sec. 36-22-14	Shut down 1,300 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Shut down 1,250 ft.
COWLEY COUNTY	
Fisher et al's No. 1 Hurt, C SW SE SE Sec. 11-34-3	Rig.
Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Shut down 1,040 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 23-32-4	Drlg. 3,000 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Shut down 3,850 ft.
ELLSWORTH COUNTY	
Gilmore Oil et al's No. 1 Sturm, NW SW Sec. 31-17-9w	Drlg. 2,445 ft.
Hershey et al's No. 1 Schultz, C NE Sec. 9-14-8w	Shut down 400 ft.
Alyward et al's No. 1 Stratman, SE NW SE Sec. 1-17-10w	Drlg. 3,265 ft.
Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Shut down 1,130 ft.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w	Shut down 1,476 ft.; making 2,000,000 ft. gas.
FORD COUNTY	
Carter Oil Co.'s No. 1 Everett, C NE Sec. 22-29-21w	Drlg. 525 ft.
Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Drlg. 4,700 ft.
GRAHAM COUNTY	
Schleimeyer et al's No. 1 Clark, SW NE NE, Sec. 11-9-25w	Drlg. 3,974 ft.
HARPER COUNTY	
Beeler et al's No. 1 Bear, C NE Sec. 21-36-6w	Shut down 1,830 ft.
HARVEY COUNTY	
Empire-Shell's No. 1 Showalter, NW SE Sec. 23-23-2w	Drlg. 2,660 ft.

(Continued on Page 136)

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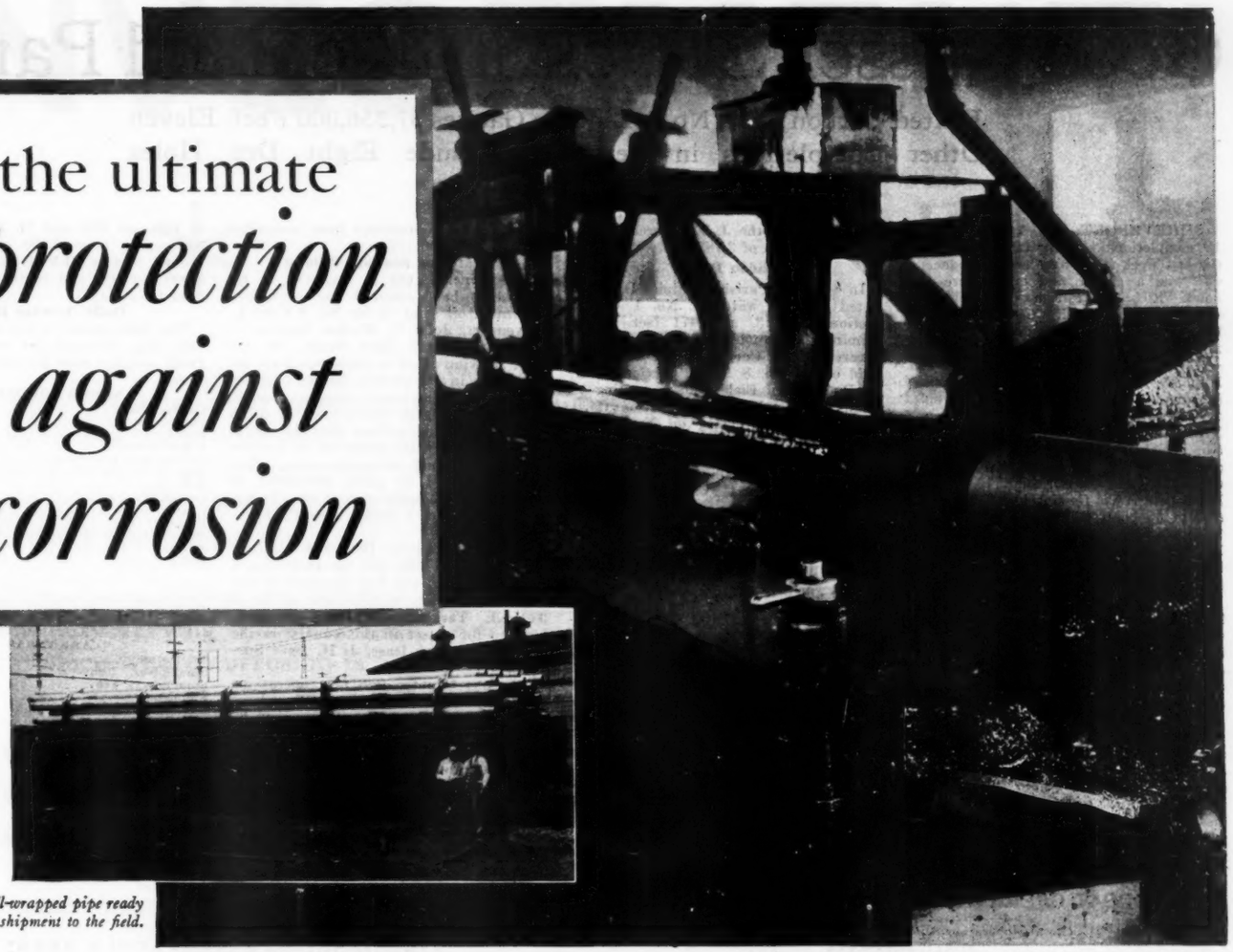

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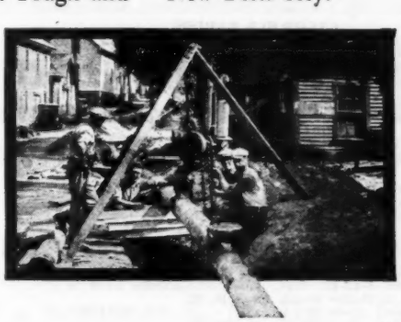

(ABOVE)—*Applying Johns-Manville Pipe Line Felts by wrapping mechanically in the mill.* (AT LEFT)—*For pipe that has left the mill unwrapped J-M Asbestos Pipe Line Felts can be wrapped by hand or by machine, in the yard or in the field.*

Johns-Manville *pipe line protection*

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Good Gasser Struck in Richland Parish

United Carbon Co.'s No. 1 Lindow Gauges 37,356,000 Feet. Eleven Other Completions in Territory Include Eight Dry Holes

By J. B. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 6.—Of the 12 completions in this territory during the last week three were small producers, one was a gasser and eight were dry holes. Richland Parish came through with a good gas well when United Carbon Co. completed its No. 1 Lindow, Section 15-16-6, gauging 37,356,000 feet at 2,440 feet. The Falcon Oil Co.'s No. 1 Nunnaly, Section 29-20-15, Caddo Parish, is pumping 50 bbls. daily with 20 bbls. of salt water. In DeSoto Parish, Ernest Nickelson has a 40-bbl. pumper on his No. 1 Nabors, Section 32-13-11, and the other producer was in the Zwolle Field where the Ohio Oil Co. completed its No. 7 Bowman-Hicks flowing by heads at the rate of 50 bbls.

The failures in Louisiana were R. O. Roy's No. 1 Hodges, Section 19-16-10, Bossier Parish, at a total depth of 2,720 feet; Pyramid Oil & Gas Co.'s No. 1 Wheeler, abandoned as dry in Section 9-18-16, Caddo Parish, and Fred Stovall's No. 1 Grasmere in Concordia Parish at 1,647 feet.

Arkansas reported three failures and one abandoned location. Lentz and others abandoned two in Miller County, their No. 2 Johnson in Section 24-15-26 at 4,700 feet and No. 3 Johnson in the same section at 2,850 feet. Ohio Oil Co. abandoned its No. 2 Rawlston location in Section 12-17-14, Union County, and will not drill. J. E. Smitherman was disappointed in Cass County, Texas, when he tested dry and abandoned his No. 1 Bell on the J. E. Ferrell Survey at a total depth of 3,783 feet.

Caddo Parish

In Caddo Parish, Ralph Davidson tested hot salt water on No. 1 Weiler, Section 33-17-13, at 2,471 feet and is reaming to bottom to drill deeper. The Shreveport Oil Corp. has a hole full of fluid on its No. 8 Hicks, Section 32-21-15, Pine Island Field, and is waiting on standard rig. United Production Corp. has set 6⅝-inch casing on No. 1 Emmons, Section 27-23-16, at 5,396 feet, and United Gas Public Service Corp. is shut down after setting 5-inch casing at 5,435 feet on No. 1 Fortner, Section 5-22-16.

Baird Brothers and others in Claiborne Parish are drilling in sandy shale at 2,915 feet on their No. 1 Whittaker, Section 30-20-7. This promises to be an interesting test if the operators decide to go to the Trinity formation. In Natchitoches Parish, J. W. Cooper and others on No. 1 Cooper are drilling in lime at 3,106 feet, and C. M. Talley is at 1,380 feet on No. 1 C. M. Talley, Section 29-11-10. The Nemours Corp. has a small gasser by drill stem test on its No. 1 Strange, Section 14-21-3, Union Parish, and is arranging to gauge. The production is estimated at 750,000 feet. An interesting test that will be watched closely is Weir & Smith's No. 1 Delta Land Co. in Section 14-2-11 in Vernon Parish. These operators have assembled a block of 6,000 acres.

Watching Sinclair Wildcat

The Sinclair Oil & Gas Co. is reported to have cored 5 feet of lightly saturated oil sand on its No. 1 Cora L. Davenport, John V. Morton Survey, in Harrison County, East Texas, for the first showing of oil in numerous tests being made in the eastern border counties of Texas. The latest reports, though, show it drilling in Georgetown at 3,728 feet which would indicate that the test is checking low with prospects of picking up the pay sand not encouraging. The well is located 20 miles northwest of Marshall and 2 miles west of the Crump-Hannegan's No. 1 Dunn, recently abandoned.

In Bowie County, Devore & Midfield are drilling at 865 feet on their No. 1 Roy B. Cooper, and Lee Timberlake and others are drilling at 2,050 feet on No. 2 Tidwell. Tarkington & Jones have derrick up for a test in this county on the W. W. Whybark lease, J. H. Dyer Survey.

In Cass County, two new operations are in progress: Davis & Pigg have derrick up for No. 1 Roy Bagan, and E. K. Atkinson is rigging up on No. 1 T. J. Wilson. Sam D. Hunter is drilling at 2,311 feet on his No. 1 Marshall Felkner.

The Pelican Natural Gas Co. (S. D. Hunter) has assembled 8,000 acres on Cross Lake about 5 miles west of Shreveport and is rigging up on the Cooper lease, Section 29-18-14, Caddo Parish. This test will be for the Trinity formation. In DeSoto Parish, J. M. Bridges of Pleasant Hill and H. B. Langford of Shreveport have 2,000 acres centering around Section 21-9-11 and will make a 3,000-foot test and begin operations not later than May 1.

Daily Average Runs

The fields showed a net increase of 100 bbls. daily in pipe line runs last week. Daily average runs for the several pools were:

NORTH LOUISIANA	
Caddo, light	7,535
Caddo, heavy	2,735
Homer	3,350
Haynesville	5,640
DeSoto and Red River	2,715
Elm Grove	480
Bellevue	540
Cotton Valley	1,810
Urania	4,530
Pleasant Hill	445
Sarepta-Carterville	1,385
Zwolle	7,530
Holly	565
Total	39,260
Previous week	39,715
Decrease	455
ARKANSAS	
El Dorado	3,760
Smackover, light	4,285
Smackover, heavy	32,295
Stephens	850
Nevada	970
Lisbon	760
Champagnolle	3,090
Bradley	50
Urbana	1,115
Total Arkansas	47,175
Previous week	46,620
Increase	555
Both states	86,435
Previous week	86,335
Increase	100

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location—Remarks—

Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8.....Fishing 1,000 ft. csg; T.D. 2,854 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 16-22-14.....Drlg. shale 2,700 ft.
Dr. W. N. Hankins' No. 1 Newell, Sec. 12-19-11, 300 ft. S and W of NE cor. section.....Rigging up.
H. I. Morgan's No. 13-B Kendrick, 2,840 ft. E, 1,320 ft. W, SW cor., Sec. 22-19-11.....Arranging to set 6-in. 1,725 ft; T. D. 1,764 ft.
Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13...Arranging to deepen; T.D. 1,600 ft.
R. O. Roy's No. 1 W. H. Hodges, C NW NW, Sec. 19-16-10.....S.W; abd.

CADDO PARISH

R. E. Davidson et al's No. 1 Weiller, Sec. 33-17-13.....Tested S.W; D.S.test 2,440-71 ft; reaming to bottom.
Garry M. Gordon's No. 1 Hatcher, 560 ft. E, 600 ft. S, NE cor. NW, Sec. 11-17-15.....Location.
Pyramid O. & G. Co.'s No. 1 Wheeler, 3,200 ft. W, 75 ft. N, SE cor., Sec. 9-18-16.....Dry and abd. 2,810 ft.
Pelican Nat. Gas Co.'s No. 1 Cooper et al, 1,310 ft. E, 1,064 ft. S, NW cor., Sec. 29-18-14.....Moving in rig.
United Prod. Co.'s No. 1 Emmons, 1,327 ft. E, 660 ft. N, SW cor., Sec. 27-23-16.....Set 6⅝-in. 5,396 ft.
United Gas Public Service Corp.'s No. 1 Fortner, 330 ft. S, 330 ft. E, NW cor., Sec. 5-22-16.....S.D; W.O. 5,435 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4.....Derrick.
Hudson et al's No. 1 Burton, Sec. 35-12-2e.....Washing to bottom; arranging to drill.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMillier, 70 ft. N, 100 ft. W, C, Sec. 26-9-4.....S.D; W.O. 3,097 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7.....Drlg. sandy shale 2,915 ft.

CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-3e.....S.D. 3,622 ft.
Fred Stovall's No. 1 Grasmere (no check), Sec. 23-8-10..Abd. 1,647 ft.
United Gas Public Service Corp.'s No. 1 Miller & Smith, 6,461 ft. S, 41° E, 26½ ft. S, 49° W of most northerly cor., Sec. 33-8-9.....Location.

DE SOTO PARISH

Dupree-Fountain's No. 1 J. M. Nabors, 250 ft. S, 250 ft. W, NE cor. NW, Sec. 5-12-11.....Drlg. 1,600 ft.
Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15.....S.D. 2,350 ft.
C. D. Neff et al's No. 1 Ramsey, 1,000 ft. W, 400 ft. S, NE cor. SE, Sec. 33-13-16.....S.D; W.O; bit in hole 3,000 ft.
Ernest Nickelson's No. 1 Nabors, 1,200 ft. N, 1,800 ft. W, SE cor., Sec. 32-13-11.....Pumping 40 bbls. 1,310 ft.
E. T. Oakes' No. 1 R. H. Bryant and others, Sec. 30-13-15, 200 ft. N and W of SE cor. NE NW.....Location.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 23-9-10.....T.A. 4,091 ft.
J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10..Drlg. lime 3,106 ft.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10. S.D. 1,518 ft.

(Continued on Page 87)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—GREENWOOD

Company, farm and location—Remarks—

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16.....Temporarily abd.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor., Sec. 17-16-16.....Location temporarily abd.

CADDO PARISH—MOORINGSPORT

Falcon Oil Co.'s No. 5 Nunnally, 2,379 ft. N, 3,849 ft. E, SW cor., Sec. 29-20-15.....Pumping 50 bbls., two-fifths S.W; 2,360 ft.

CADDO PARISH—OIL CITY

Trio Corp.'s No. 1 Levee Board, 212 ft. S, 500 ft. E, NW cor., Sec. 17-20-15.....Drlg. 1,800 ft.

CADDO PARISH—PINE ISLAND

Haynes Bros.' No. 2 Spell, 956 ft. W, 200 ft. N, SE cor. SE, Sec. 15-21-15.....S.D. 3,962 ft.
Shreveport Oil Corp.'s No. 8 Hicks, 600 ft. S, 800 ft. E, NW cor., Sec. 32-21-15.....Hole full fluid 1,600 ft; W.O.S.R.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15.....Set 10-in. 150 ft; S.D.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4.....Location.

OUACHITA PARISH

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.....Location.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.....Location.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No. 5-C Thomason, 350 ft. S, 217 ft. E, SW cor. NE NE, Sec. 21-16-6e.....Set 6-in. 2,328 ft.
Richland Operating Co.'s No. 1 Cooper, 600 ft. N, 600 ft. W, SE cor., Sec. 13-16-6.....Set 6-in. 2,281 ft; drlg. plug.
Southern Carbon Co.'s No. 1 J. O'Neal, 660 ft. N, 760 ft. E, SW cor., Sec. 36-17-6e.....Set 12-in. 175 ft; drlg. 640 ft.
Southern Carbon Co.'s No. 2-B Thomason, 1,980 ft. S, 2,080 ft. W, NE cor., Sec. 23-16-6.....T.D. 2,442 ft; plugged back to 2,285 ft.
United Carbon Co.'s No. 1 Mann, 1,320 ft. S, 1,921 ft. W, NE cor., Sec. 12-16-5e.....Rig up.
United Carbon Co.'s No. 2 Cooper, 660 ft. N, 3,551 ft. E, SW cor., Sec. 13-16-6.....Location.
United Carbon Co.'s No. 1 Lindow, 1,980 ft. S, 37 ft. E, NW cor., Sec. 15-16-6.....37,356,000 ft. gas 2,440 ft.

SABINE PARISH—ZWOLLE

W. M. Coats' No. 2-A Sabine Lbr. Co., 330 ft. S and E, NW cor. NW SW, Sec. 1-7-12.....Tested dry 2,495 ft; W.O.
W. M. Coats' No. 3 Sabine Lbr. Co., SW cor. SW NW, Sec. 1-7-12.....S.D. 760 ft.
O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12.....Drlg. 1,200 ft.
Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 32-8-12.....S.D; W.O. 2,528 ft; S.O.
Jordon Drlg. Co.'s No. 1 La. Long Leaf Lbr. Co., 660 ft. N, 347 ft. W, SE cor. SW SE, Sec. 3-7-11.....Drlg. 1,850 ft.
Lacy Prod. Co.'s No. 3 Cooper, NW cor. SW NE, Sec. 30-8-11.....Drlg. 1,500 ft.
H. H. Alvord, Jr.'s No. 1 Sabine Lbr. Co., 330 ft. N, 165 ft. E, SW cor. NE, Sec. 1-7-12.....Location.

(Continues on Page 103)

INVESTMENT!

* * *

A pipe line is truly an investment of major importance. The engineering design and the selection of the proper kinds of pipe to meet the varying soil conditions determines the yearly cost. "Pipe prescription" crystallizes the knowledge of what certain pipe materials have done under certain operating conditions and applies those facts toward the lowering of yearly operating cost.

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AN INVESTMENT—NOT AN OUTLAY

New Pool Opened in Jim Wells County

Carsil Oil & Gas Co.'s No. 1 McGill, 15 Miles From the Nearest Production, Comes in Making 30,000,000 Feet of Gas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 6.—Carsil Oil & Gas Co.'s No. 1 McGill in northwestern Jim Wells County, previously reported as likely to make a gas well and open a new pool, 15 miles from nearest production and 25 miles from the nearest field, is in and is estimated at around 30,000,000 feet of gas or bigger. It came in Sunday, March 29, and ran wild for a few days, but was capped and is now under control. Total depth is 2,689 feet and casing is set at 2,680 feet. The first string of 6⅝-inch stuck and was cemented at 2,200 feet and a full string of 5 3/16-inch was run and set at 2,680 feet. The well had started to make a little water before being capped.

The No. 1 McGill is on a general trend between the Pettus Field on the northwest and the Refugio and Agua Dulce Fields on the southeast and running through the Cartwright gas field and Mathis gas field in southeastern Live Oak and extending down through the Jim Wells and southeastern Duval Counties and eastern Jim Hogg and western Brooks Counties into Starr County.

With the exception of the Cartwright and Mathis Fields, which are several years old, this new gas well, the J. E. Walsh and Larcro Gas & Petroleum Co.'s No. 1 Wade in northeastern Jim Wells, and gas recently discovered in northwestern and southwestern Brooks County are the first producing spots found along that line of geology. Carsil Oil & Gas Co. is a subsidiary of the Atlantic Lobos of Philadelphia.

Thus far along that general line of "play" there has been nothing found but gas with the exception of a recent deep test by the Houston Oil Co. in the Cartwright Field which is a small oil well about 1 mile deep.

Late last week the R. H. Ewell and others' No. 1 Doerring, farther south in Jim Wells had a showing of gas in light green sand at 3,450 feet and was making preparations to test it out. This test is also in pure wildcat territory. It is about 15 miles south and 5 miles east of the Carsil test and is 5 miles south and 2 miles east of the city of Alice. In connection with the other production found in that belt this new showing is interesting. R. H. Ewell's No. 1 Doerring is 600 feet southeast of the old Diamond S well on the same land, drilled several years ago, which had good showings of gas.

Duval County and Laredo District

In northern Duval County Magnolia Petroleum Co.'s No. 2 Wilson is an oil well flowing at the rate of 750 bbls. a day. It is a half mile extension of the south extension to the Schoolfield-O'Byrne Pool and when it first found the sand it made a lot of gas and looked as though it was going to be a gas well and might mark the south limits of the new pool. It had gas sand at 2,358-64 feet and oil sand at 2,364-77 feet and set casing at 2,368 feet, evidently cutting off the gas and making a good oil well. It is about as good as any well in the field. This makes the field about a mile long, with three good oil wells, two good gas wells and no dry holes, and with Frasher & Schoolfield's No. 2 Bishop Duval Land Co. down at 2,310 feet and located about half way between the Magnolia's No. 2 Wilson on the south and the discovery well on the north. It seems sure to make an oil well if its location means anything. No other tests have been started around the field, but it is understood that several more will be drilled soon.

J. W. O'Byrne's No. 1 Weil in Survey 568, about 5 miles southwest of the Schoolfield-O'Byrne extension and about 8 miles northeast of the Humble's Kohler gas and oil pool last week had a sand at about 1,755 feet which is about the right depth for the sand now producing in the Kohler Field, but it was dry. The test is being drilled mainly with the idea of getting production at around the same depth as in the Schoolfield-O'Byrne Pool and its extension.

In the north end of the Humble's Kohler Field the company's No. 50 Kohler is now down 5,700 feet and drilling. It is the deepest test that has been made in that district.

Escobas Pool

Operations in the Escobas Pool, Zapata County, in the Laredo district have dropped to nine, mainly tests drilled to feel around for extensions or for deeper sands. Nordan & Morris have quit at 2,092 feet in their No. 1 Concepcion Bustamente in Share 33 of Fansler's Subdivision of the Comitas grant. It is off at the southwest corner of the field and is 600 feet below proven production.

O. W. Killam abandoned his No. 4 A. Bustamente in Block 6, Share 3, Fansler's Subdivision, at 2,000 feet. It was about a 2-bbl. well at 1,450 feet. It is a west edge proposition at the northern end of the area.

S. R. C. Oil Corp. also abandoned at 1,492 feet its No. 5-D Montemayor in Block 8, Survey 64, on the west side of the north end of the pool. Production in that end of the field is all from sand at about 1,300 feet. This test had some showings of oil and gas but it seems to have been too far west.

This leaves little going on in that part of the Laredo district. O. W. Killam's No. 5 Bustamente in Block 7, Share 5, Fansler Subdivision, is down about 1,000 feet and drilling and W. R. Shankle has a test at the south end of the pool with casing set and in sand at 1,372-76 feet and waiting on cement, in Block 10 of the Zorro Subdivision of the Comitas grant.

In the northern part of Zapata County W. T. Henry and others found a sand at 1,178 feet in Block 10, Survey 4, Fullerton Subdivision of Share 8, and was arranging to make a test of it.

Balcones Fault Zone

Along the Balcones Fault zone east from San Antonio, Turner, Whorton & Anderson's No. 1 Harriss, 5 miles northeast of the Dale Field has had four showings of gas, the first at 437 feet, and was drilling in Taylor marl late in the week at a little below 2,000 feet. It is in Bastrop County about 1½ miles from approximately the center of the southwest line of the county. Because of the number of gas showings and the chance that if it does not get a serpentine plug it will get the Austin chalk high, it has been attracting a lot of attention. Two old wildcat tests a little south of it got serpentine with light showings of oil.

Southwest of the Dale Field Mills and others' No. 2 McMahon has set casing and looks like a gas well at 930 feet. The No. 1 was completed as a small oil well at 2,185 feet, but at about 930 feet it blew out gas. The No. 2 is located 50 feet from the No. 1 and the idea is to develop a supply of gas to use in drilling other tests. The operators believe they have a new pool. The No. 1 McMahon had an elevation of 448 feet and topped the chalk at 2,115 feet. The Neuhaus and others' No. 1 J. B. Moore is less than a half mile north of the No. 1 McMahon and at 2,325 feet it is still in Taylor marl, and shut down for water. It looks low and seems to prove the fault.

In the western extremity of Hays County and on the north side of the fault J. C. Jones' No. 1 Byler has set casing at 830 feet in the top of the Pennsylvanian and is about ready again to resume drilling. It is a test that will be watched with interest.

Third Test to Start

In northwesten Guadalupe County, where Jones & Erwin last year drilled two shallow tests, they are going to drill a third which will go below the Edwards. The two tests drilled went to the Edwards and they all were dry. One of them cut the fault and it is thought by the operators that conditions are favorable for a test to lower formations. Of the three tests drilled the last one topped the Edwards at 672 feet.

West of San Antonio along the Balcones fault zone there are only two tests that are being watched with much interest at this time. Cullen & Bender in the extreme northwestern corner of Atascosa County 1½ miles east of Lytle and 5 miles northwest of the Somerset Field are down 2,987 feet in the No. 1 Duderstadt in the Klemcke Survey and about 400 feet in the Glenrose. Elevation is 683 feet and the top of the Edwards is 2,060 feet. This test was confused in drilling reports with the Balcones Oil Corp.'s No. 1 Jackel and was first reported as a deepening of the Balcones test which was abandoned a few years ago. It is 1½ miles west of the Balcones

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SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
Collins and Morris' No. 10 Halberdier, J. M. F. Peres Sur.	T. D. 410 ft.; drlg.
Boling & Michael's No. 1 Adams, Miguel Gortaris Sur.	T. D. 700 ft.; (W.O.).
F. H. Eckert's No. 10 Dobrowolski, 400 ft. from W line, 150 ft. from S line of lease, Sur. No. 52	Location.
I. L. Dingman's No. 1 W. F. Gembler, Juan Montez Sur.	T. D. 653 ft.; abnd.
Gatlin Oil Co.'s No. 6 Beck, Juan Montez Sur.	T. D. 710 ft.; comp. 8 bbls.
W. S. Rogers et al's No. 1 L. Donnop, Juan Montez Sur.	T. D. 400 ft.; shut down.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, A. Floyd Sur.	T. D. 50 ft.; spudded and shut down.

EDDINGTON POOL—FALLS COUNTY

Eddington et al's No. 3 Llewellyn, George Allen Sur.	T. D. 610 ft.; drlg. shale.

DARST CREEK FIELD—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 24-A Denman	Rigging up.
Magnolia Petroleum Co.'s No. 1 M. E. Roamel, J. Robinson Sur.	T. D. 2,408 ft.; abnd.
W. R. Posey's No. 1 Knodle, J. R. Robinson Sur.	Rigging up.
Magnolia's No. 8 Rand Miller, Alexander Sur.	T. D. 2,680 ft.; comp. 70 bbls. oil; 30 bbls. water.
Simms Oil Co.'s No. 5 Manford, James Hodges Sur.	T. D. 2,671 ft.; abnd.
Sun Oil Co.'s No. 1 Dowdy, J. C. Darst Sur. No. 9	T. D. 2,593 ft.; comp. 88 bbls. oil.

CHAPMAN POOL—WILLIAMSON COUNTY

Collins et al's No. 8 Lawrence, S. Miller Sur.	Location abandoned.
Chapman et al's No. 2 Lawrence, S. Miller Sur.	Derrick.
Chapman et al's No. 7 Fuchs, S. Miller Sur.	T. D. 1,863 ft.; comp. 20 bbls.
Vitex Oil Co.'s No. 8 Kilgore, Simon Miller Sur.	T. D. 1,735 ft.; waiting on cement.

PETTUS AREA—BEE COUNTY

J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur.	T. D. 3,874 ft.; waiting on cmt.
Houston Oil Co.'s No. 1, Blk. 23	T. D. 3,911 ft.; abnd.
Houston Oil Co.'s No. 1, Blk. 33	T. D. 3,914 ft.; abnd.
United Prod. Co.'s No. 32 Ray, G. Habbermacher Sur.	T. D. 3,925 ft.; drlg.

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WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks—
Cullen and Bender's No. 1 Medina Irrigation, W. Klemke Sur. No. 439	T. D. 2,987 ft.; drlg.
Pacific Oil & Gas Co.'s No. 1 Harris, G. Van Norman Sur.	T. D. 795 ft.; standing.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan	T. D. 720 ft.; drlg.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 970 ft.; to be deepened.
McCleary et al's No. 1 Schening, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 574 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 32	T. D. 1,025 ft.; fishing.
Page et al's No. 1 Cox, Rutersville College Sur. No. 18	Spudded and shut down.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 712 ft.; shut down.

BASTROP COUNTY

Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 375 ft.; standing.
Turner-Whorton and Anderson's No. 1 Harris, Joshua Gray Sur.	T. D. 2,010 ft.; drlg.

BELL COUNTY

Hartman et al's No. 1 M. E. Reed, Nancy Roberts Sur.	T. D. 907 ft.; showing oil; shut down.
Mildon Oil Co.'s No. 1 J. K. Edds, Maxiano Moreno Sur.	T. D. 519 ft.; drlg. shale.
O. O. Alford and others' No. 2 F. Spankell, W. Woodford Sur.	T. D. 500 ft.; shut down.
J. W. Riley et al's No. 1 J. W. Mosely, Maxiano Moreno Sur.	T. D. 1,365 ft.; dry and abnd.

BROOKS COUNTY

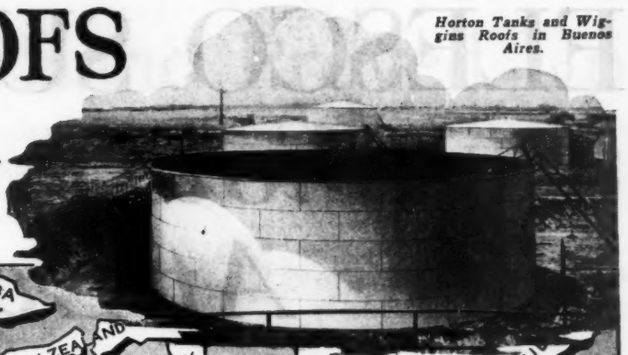
Ed East's No. 3 B. Garcia, 150 ft. from N and W lines of Blk. 5, Share A-1, Las Mastena y Gonzalene grant	T. D. 1,002 ft.; standing.
The Texas Company's No. 1 Allen, San Antonita grant	Location.

BEE COUNTY

Hurlbut et al's No. 1 Mrs. D. Chestnut	T. D. 5,010 ft.; abnd.
Alexander et al's No. 1 McFall, 3 miles south Skidmore	T. D. 280 ft.; shut down.

(Continued on Page 102)

TANKS AND ROOFS for any location



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Birmingham	1536 Fiftieth St., N.	San Francisco	1054 Rialto Bldg.
Chicago	2128 Old Colony Bldg.	Seattle	4323 Smith Tower
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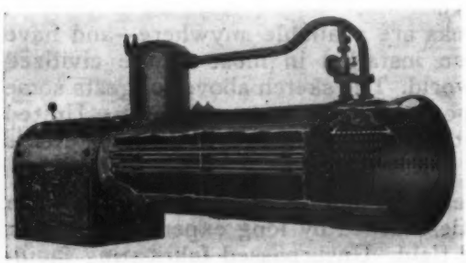

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A-587

Another Barbers Hill Sand Proved Up

Mills Bennett Production Co. Well Flowing 1,031 Bbls. of Pipe Line Oil From Second Deep Sand Underlying Salt "Overhang"

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 6.—A second deep sand underlying the salt "overhang" on the southeast side of the Barbers Hill Dome, Chambers County, has been proved up by Mills Bennett Production Co.'s No. 2 Gulf-Fisher, William Hodges Survey, flowing 1,031 bbls. of pipe line oil in the first 24 hours on a half-inch choke with working pressure of 295 pounds. The sand is at 5,223-42 feet where one joint of screen was set.

This well originally was completed in July of 1930 in sand at 4,769 feet, from which horizon it came in flowing 2,000 bbls. daily on chokes. It was the completion of this well which gave the first real incentive to extensive development of subsalt production which has spread to all sides of that dome as well as to other domes since then. At that time it was the first well to establish prolific production in sand underlying salt and the steady, consistent flow it maintained for several months resulted in it being classed as one of the best wells at Barbers Hill.

This well drilled through 483 feet of cap rock and 256 feet of salt from 1,694-2,433 feet, the greatest mass of cap rock and salt ever drilled through up to then, although since then that amount has been tripled. In deepening the well to its present lower sand, a hard rock, believed to have been a second ledge of cap, was drilled through at 5,079-5,101 feet.

To Deepen No. 1 Gulf-Fisher

Mills Bennett Production Co. already has rigged up No. 1 Gulf-Fisher, 150 feet south of No. 2, to deepen this well to the lower sand. No. 1 Gulf-Fisher being slightly farther out from the dome, missed the salt although it drilled through a thin protrusion of cap rock. It formerly was completed at 4,754 feet flowing 3,200 bbls., but being farther down the sand started showing considerable water soon after completion, in contrast with No. 2.

Late in the week several other wells on various sides of the dome were in deep sands showing oil and either were preparing to test or had casing cemented. Chief among these was Humphreys Corp.'s No. 2-B Barber, north flank, which was on sand at a total depth of 4,917 feet. This sand underlies the salt overhang penetrated at 1,389-3,239 feet and is in virtually wildcat territory. It is a few hundred feet southwest of No. 1-B Barber, which was abandoned at a total depth of 6,793 feet, and about 1,000 feet to the southwest of Humphreys' No. 1 Morgan, the discovery well on the north flank, which made a small amount of oil at 6,404 feet and then was abandoned. The only other well in that area is Humphreys' No. 1 Louise Fitzgerald, some distance to the east, which was completed two months ago in sand at 5,300-67 feet flowing 70 bbls. hourly. The latter also is a subsalt well, drilling through salt at 2,116-2,664 feet.

Humphreys Corp.'s No. 1 Lula Barber, on the south end of the pool on the west flank, picked up the deep sand there and at a total depth of 5,422 feet has cemented through 9⅝-inch casing to test.

New Location in West Side

One new location was made on the west side, this being Sinclair Oil & Gas Co.'s No. 3 Smith, 50 feet out of the south corner of the tract, W. S. Smith Survey. A rig already is up, making 13 operations under way in that particular area, not including those in other areas around the dome.

Humphreys Corp.'s No. 2 J. F. Wilburn, in sand at 5,130 feet under the salt on the east side of the dome, failed to flow when swabbed and now is preparing to deepen. In addition to those mentioned, wells on the sand include Sun Oil Co.'s No. 8 Chambers, south side of the dome, and Sun Oil Co.'s No. 1 Smith, west side of the dome.

Barbers Hill continued the most active coastal field with 25 active operations at the close of the week. In this number are included old wells which at the close of the week were pulling screen or rigging up to deepen.

Daily average production of coastal fields for the week ended April 4 was 172,997 bbls., an increase of 2,235 bbls., due chiefly to gains at Barbers Hill and Humble. The increase, however, was not an indication of any trend, as coastal production has been declining steadily for months and gains usually have been temporary, reflecting the bringing in of several goods wells at times. Production of Texas coastal fields was only 146,255 bbls. daily, or only a little over 6,000 bbls. above the allowable figure assigned in the railroad commission's state-wide proration order just issued. The production by fields was:

GULF COAST PRODUCTION

Texas Coast

Allen	17
Barbers Hill	22-208
Batson	995
Big Creek	3,377
Blue Ridge	1,111
Brenham	38
Boling	801
Clay Creek	2,306
Damon	541
DeWalt	11,745
Esperson	2,875
Fannett	385
Goose Creek	4,442
Hankamer	2,900
High Island	589
Hull	5,796
Humble	11,113
Lost Lake	274
Markham	162
Moss Bluff	746
Mykawa	501
Nash	269
North Dayton	819
Orange	1,921
Orchard	1,736
Pierce Junction	8,819
Port Neches	1,439
Raccoon Bend	8,997
Refugio	28,999
Rockland	8
Saratoga	1,033
Sour Lake	2,934
South Liberty	2,296
Spindletop	10,782
West Columbia	4,871
Total Texas Coast	146,255
Week ended March 28	144,534
Increase	1,721

Louisiana Coast

Anse La Butte	60
Bayou Blue	79
Bayou Bouillon	161
Black Bayou	775
Edgerly	508
Jennings	785
Hackberry	2,806
Iowa	.....
Lake Barre	2,804
Lake Pelto	129
Lockport	6,097
Port Barre	1,662
Sorrento	40
Starks	776
Sulphur	1,822
Sweet Lake	1,081
Vinton	6,204
Welsh	.....
White Castle	983
Total Louisiana Coast	26,742
Week ended March 28	26,228
Increase	514
Total Gulf Coast	172,997
Week ended March 28	170,762
Increase	2,235

GULF COAST FIELDS AND WILDCATS

Week Ended April 4

All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 1 Gulf-Fisher (workover), Wm. Bloodgood Sur., 50 ft. from SW line and 250 ft. from SE line tract.—Rig up to deepen 4,754 ft.

Mills Bennett Prod. Co.'s No. 2 Gulf-Fisher, Wm. Bloodgood Sur., 400 ft. from S line and 50 ft. from W line lease (workover).—Oil sand 5,223-42 ft.; comp. flowing 1,031 bbls., ½-in. choke, in first 24 hrs., 295 lbs. pressure.

Mills Bennett Production Co.'s No. 1 Gulf-Smith (workover), W. D. Smith Sur., 50 ft. from S line and 50 ft. from E line tract.—Rig up to work over 5,573 ft.

Mills Bennett Prod. Co.'s No. 1 Wilburn, H. Griffith Sur., 1,545 ft. from W line and 47 ft. from N line (workover).—Drlg. out B.P.V. 5,035 ft.; to deepen.

Gulf Production Co.'s No. 4 Wilburn (workover), Henry Griffith League, 50 ft. from S line and approximately 1,400 ft. from W line tract.—Drlg. shale 5,172 ft.

Humphreys Corp.'s No. 2-B Barber, north.—Oil sand 4,917 ft.; cmtd. 6⅝-in. csg.

Humphreys Corp.'s No. 2 Wilburn, southeast.—Set 154 ft. screen 5,130 ft.; failed to flow; pulling screen to deepen.

Humphreys Corp.'s No. 1 Lula Barber, west flank, W. D. Smith Sur., 50 ft. from N line and 50 ft. from E line of tract.—Oil sand 5,422 ft.; cmtd. 9⅝-in. csg.

Humphreys Corp.'s No. 1 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from S line and 75 ft. from W line of tract.—Drlg. sandy lime 4,843 ft.

Humphreys Corp.'s No. 2 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 478 ft. S line 10-acre tract.—Drlg. hard sand 4,286 ft.

Humphreys Corp.'s No. 3 E. H. Winfree, west flank, W. D. Smith Sur., 264 ft. from S line and 50 ft. from W line of 10-acre tract.—Drlg. sandy lime 4,285 ft.

Humphreys Corp.'s No. 4 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 617 ft. from S line 10-acre tract.—Drlg. gumbo 2,110 ft.

Humphreys Corp.'s No. 5 E. H. Winfree, W. D. Smith Sur., 854 ft. from S line and 50 ft. from W line.—Derrick.

McAlbert Oil Co.'s No. 5 Woodward (workover), Wm. Hodges Sur.—Drlg. shale 5,393 ft.

Rio Bravo Oil Co.'s No. 2 Fisher, west flank.—Rock 4,201 ft.; cmtd. cavity; to sidetrack 3,030 ft.

Sinclair Oil & Gas Co.'s No. 3 Smith, W. D. Smith Sur., 50 ft. out of S cor. of tract.—Spudded.

Sun Oil Co.'s No. 8 Chambers, south.—Oil sand 4,514 ft.; cmtd. csg. to test.

Sun Oil Co.'s No. 4 McKinney, east flank, Wm. Hodges Sur., 100 ft. W of No. 3 and 40 ft. from N line of tract.—Drlg. shale 6,448 ft.

Sun Oil Co.'s No. 1 Smith, west.—Coring sand showing oil 5,420 ft.

(Continues on Page 103)

PIERCE JUNCTION DOME PRODUCTION EXTENDED

HOUSTON, Tex., Apr. 6.—Vacuum Oil Co. is pulling screen in its No. 1 Waite, 225 feet out of the SE cor., Section 12-9s-7w, Calcasieu Parish, Louisiana, which was completed late in January as the discovery well of the Iowa geophysical prospect. The hole will be deepened from the present sand at 5,001-08 feet. This well came in flowing 250 bbls. daily with an estimated 4,000,000 feet of gas daily on a three-eighths inch choke but was shut in after a week for lack of storage. Recently it was opened to provide fuel for treating oil already produced and since then it has made only a small amount of gas and oil.

VACUUM OIL TO DEEPEN CALCASIEU PARISH WELL

HOUSTON, Tex., Apr. 6.—Production on the extreme northwest side of the Pierce Junction Dome received a small extension to the north and west through Warner-Quinlan's No. 2 Minchen, Lot 5, Armstrong Subdivision, B.B.B.&C. Survey No. 1,028. In sand at a total depth of 4,471 feet this well came in flowing an estimated 800 bbls. daily. It previously had tested salt water at 4,200 feet.

Rio Bravo Oil Co.'s No. 102 G.H.&S.A., in the same area, failed to flow after swabbing at 4,441 feet and now is being rigged up to pump. Operations in this sector, which weeks ago was among the active areas on the Gulf, have slackened materially with no new drilling being started.

HUMBLE NO. 7 STERLING STILL OFF PRODUCTION

HOUSTON, Tex., Apr. 6.—Humble Oil & Refining Co. late in the week had failed to get its No. 7 Sterling, east flank of the Moss Bluff Dome, back on production. The well was completed earlier in the week flowing 540 bbls. daily on a three-eighths inch choke from sand at 5,855 feet but sanded up. The hole has been washed and now is being swabbed. The well had a working pressure of 280 pounds. It extends production approximately 400 feet southwest of the discovery well.

Gulf Production Co.'s No. 3 McFaddin, also on the east side of Moss Bluff but farther north toward Humble's No. 1 Sergeant, a producing well, has been abandoned as dry in sand and shale at 6,296 feet. It failed to find the producing horizons from which four producing wells have been completed in that area.

REVIVED ACTIVITY AT HUMBLE IS INDICATED

HOUSTON, Tex., Apr. 6.—Indications of a revival of activity at Humble are seen with the starting up of two new operations and the making of locations for two others. These will make a total of six active tests drilling or to be drilled at once. For some time work at Humble has been comparatively slow.

Sun Oil Co. has started in its Nos. 22 and 23 Bender in the north end of the pool on the west flank of the dome, the former drilling in shale below 1,890 feet and the latter in gumbo below 926 feet. This company also made location for No. 1 O'Connor, 75 feet out of the southeast corner of the O'Connor 1-acre tract, Adams Survey. This will be a north extension test for the west flank. Rio Bravo Oil Co. has made location for No.

(Continued on Page 105)

Eunice Pool May Be Extended to South

Big Muddy Well of Ohio Oil Co. Swabs 1,000 Bbls. Lakota Sand Discovery on Dry Creek Dome Increases Output

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 7.—The only completion in the Hobbs Pool for several weeks is the Gypsy Oil Co.'s No. 7 Grimes which is waiting for proration test. The California Co.'s No. 1 Meredith, in the Eunice Pool, is nearing the pay and may extend that pool one-third mile south. The Western Drilling Co.'s No. 1 Bridges, in the Caprock area in Lea County, is shut down for orders at 5,005 feet. No new operations were reported in New Mexico.

The prospective drilling campaign in the Greasewood district in Colorado is still waiting on the outcome of pending negotiations. The Greasewood discovery well showed a slight increase the past week and is averaging 380 bbls. daily. There were no completions or new wells started in Colorado.

The Ohio Oil Co.'s discovery well in the Lakota sand in the Big Muddy Field in Wyoming swabbed 1,000 bbls. in 40 hours and is drilling slowly into the sand. Two small completions in northeastern Wyoming were reported and Sublet County, in the southwestern part of the State, showed some increase in activity.

Utah had only routine drilling operations to report.

The Ohio Oil Co.'s discovery well in the Lakota sand on the Dry Creek Dome in Carbon County, Montana, was deepened 6 feet and increased its output 100 per cent to 1,200 bbls. daily. One new operation on this structure is spudding. The Western Natural Gas Co.'s No. 1 Poindexter, in Liberty County, was dry and abandoned and one failure was reported in the Border Field.

NEW MEXICO

Eunice Area—Lea County

The California Co.'s No. 1 Meredith, SE cor. NE, Section 19-21-36, in the Eunice area, one-third mile south of the Getty Oil Co.'s No. 1 State, the nearest producer, and 1½ miles northeast of the Continental Oil Co.'s No. 1 Lockhart, the discovery well, is at an interesting stage and will be closely watched during the next week or two. At last reports it was coring at 3,876 feet with the core showing some oil. At 3,840 feet it had a blowout and gauged 15,200,000 feet of gas. While the Eunice Pool has not up to this time shown any such spectacular results as took place in the Hobbs Pool last year, there is a possibility of history repeating itself. Six producers so far have been drilled in, but it will be recalled that a wildcat 3 miles away from the discovery well really caused the big drilling campaign of last year at Hobbs. The California Co.'s well is the only one drilling at this time. Another will be drilling shortly, however, in the Continental Oil Co.'s No. 3 A. E. Meyers, NW SE NW, Section 17-21-36, an offset on the south to the Atlantic Oil Producing Co.'s No. 1 Coleman, a recent completion, which is shut in after producing 17,065 bbls. up to date.

Hobbs Area—Lea County

Gypsy Oil Co.'s No. 7 Grimes, SE NE NW, Section 32-18-38, the only active operation in the Hobbs Pool the past few weeks, topped the pay at 3,975 feet and was drilled to 4,150 feet. It is waiting for official proration gauge. It is in proven territory. Midwest Refining Co.'s No. 26 Capps, C SE SW, Section 3-19-38, is moving in. Western Drilling Co.'s No. 1 State, C SW NE, Section 15-18-37, northwest of production, is shut down for orders after completing rig and drilling water well.

Caprock Area—Lea County

Western Drilling Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, in the Caprock area, in which The Texas Company has an interest, is shut down for orders at 5,005 feet. This well, which is 2 miles southwest of Inglefield & Bridges, No. 1 State, which was abandoned several years ago after having some good shows, and 3½ miles west of the Vacuum Oil Co.'s No. 1 State, which came in two years ago as a small producer, topped the brown lime at 3,040 feet. It had a small gas show at 3,805 feet and another at 4,505-19 feet. At 4,688 feet it had a show of oil. At 4,694 feet the oil rose 1,000 feet in one hour and at 4,757 feet the oil had increased to 3,750 feet. A second break was expected at around 4,900 feet, but failed to materialize.

Jal Area—Lea County

Leonard & Levers' No. 1 Justis, C SE NE, Section 19-25-37, the only active operation in the Jal area, junked its hole at 365 feet, skidded the rig 15 feet to the east and is spudding at 15 feet in new hole.

Lovington Area—Lea County

Western Drilling Co.'s No. 1 State, NE cor. SE, Section 13-17-36, is shut down for orders at 1,887 feet. The 10-inch was cemented in the red beds at 1,885 feet.

Chaves County

Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, Blackdom area, is drilling at 2,400 feet in gray lime, and R. T. Neal and others' No. 1 Russell, SW NW NW, Section 21-14-25, Hagerman district, is drilling at 1,805 feet in lime.

Mora County

Fulton Petroleum Co.'s No. 1 Santa Fe-Dioice Co., NE cor., Section 14-19-21, Wagonmound district, is drilling at 160 feet in shale. It is after carbon dioxide gas to be used in making dry ice.

San Miguel County

Hershefield Oil Development Co.'s No. 1 Cabra Springs Ranch, NE, Section 21-12n-22, Pinon Mesa, is shut down at 1,735 feet, and Pioneer Oil Co.'s No. 1 Farmer, SE cor. NW, Section 14-15-16, 6 miles east of Last Vagas is shut down at 2,340 feet. Cibola Petroleum Co.'s No. 1 Larazola, SW cor. NE, Section 9-13-14, Ribera district, is shut down at 755 feet and showing no activity. Con-O-Kul Oil Co.'s No. 1 Stephenson, NW cor. NE, Section 34-17-21, Cherryvale district, is bottomed at 436 feet and fishing for bit. Star Oil Co., Ltd.'s No. 3 Adams, NE cor., Section 25-17-17, is drilling at 3,455 feet and had an oil and gas show at 3,420-35 feet which was cased off with 6⅝-inch at 3,435 feet.

San Juan County

Continental Oil Co.'s No. 24, SW cor. NW, Section 1-29-19, Rattlesnake Dome, is bottomed at 4,730 feet and standing cemented with the whipstock at 3,350 feet preliminary to beginning to sidetrack.

COLORADO

While it is practically certain that five or six wells will be drilled this year in the Greasewood area in Weld County, northeastern Colorado, where the Platte Valley Petroleum Co. brought in the discovery last October in its No. 1 Patterson, NE SE NW, Section 24-6n-61, no locations have been definitely announced. The Platte Valley company is negotiating with several companies for two or three wells which are required under its leases and it is probable a definite understanding will be reached within a few days. The Reiter-Foster Oil Co. is one of the parties to the negotiations and the Continental Oil Co. is reported to be another.

Miller Robert Taylor, who is forming the Aztec Corp. to take over 2,320 acres on the Greasewood Dome and several blocks in other districts in eastern Colorado, is still in the East in conference with associates and locations of the two wells to be started by July 1 will not be released until his return. These two wells, which will be in the Greasewood area, will be put down with rotary equipment under contract.

W. L. Christiana, who has turned a number of tracts in Weld and Morgan Counties to several of the major companies, has acquired for his own account 320 acres in the W half, Section 14-6n-61, a mile northwest of the discovery well and may drill a test. While the lease does not require immediate drilling, it is understood negotiations are pending with major companies owning acreage in the vicinity with a view to putting down a well this summer.

The Platte Valley company's discovery well was reported the past week to have shown a slight increase in daily output and to be making an average of 380 bbls. natural per day. Total shipments for March was 8,871 bbls., or an average of 260 bbls. daily. This was about 40 bbls. daily less than in February, but the shipments to the Continental refinery at Denver do not constitute the entire output. The company is selling considerable crude to farmers for use in their tractors and customers are coming from as far east as the Kansas-Nebraska boundary.

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan anticline, has repaired damage to rig caused by a fire recently and has resumed operations. It is bottomed at 4,090 feet, the total depth for the past two months, and is cleaning out 75 feet off bottom. This operation has been a difficult one on account of caving conditions in the shale. The 8¼-inch froze at 3,670 feet several months ago and although 1,800 pounds pressure was put on the pipe in an effort to free it, it could not be budged. The 6⅝-inch is being carried at present and also has been giving trouble. Upon the efforts to land this string on bottom may depend whether drilling will be continued with cable tools or rotary equipment. So far the drilling has been in the Pierre shale.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, C S half NE, Section 7-4s-66, near Aurora, is drilling at 5,786 feet in a very hard sandstone that requires frequent sharpening of the bit. Just above this depth, where the formation was softer, there was a show of gas and at 5,735 fee, the hole bailed about 7 bbls. of live oil.

Adams County

Nettie M. Slatt's No. 1 Hills, SE cor., Section 27-3s-64, Watkins district, is bottomed at 2,700 feet and preparing to run and carry 8⅝-inch. There are 4,000 feet of special seamless casing of this size on the racks and it was planned to drill open hole as far as possible, but this week the ground began to cave and the string will be run and underreamed in an effort to land it at 4,000 feet.

Lincoln County

Eastern Colorado Oil Co.'s No. 1 State, SE cor. NW, Section 26-14s-57, formerly the Kelly Oil Co., is bottomed at 3,380 feet and underreaming to lower 4¾-inch from 2,450 feet. New boiler recently was hooked up, camp completed and string of casing moved in by the new interests. The hole, which has had several shows of oil and gas in upper horizons, is believed to be bottomed less than 200 feet off the first sand in the Dakota.

Larimer County

C. Leonard Smith's No. 1 State, SE cor., Section 36-12n-70, Sand Creek Dome, is bottomed at 710 feet in conglomerate and preparing to run 4¾-inch to shut off water which broke in from behind 6¼-inch. Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4n-69, Berthoud Dome, is bottomed at 3,792 feet, below the Muddy sand, and fishing for tools. Swabbing during daylight shift while fishing is averaging around 90 bbls. daily. Same company's No. 1 Hall, NE cor., Section 20-4-69, cased off water with 15½-inch at 470 feet, and its No. 1 Wilson, NW cor. SW, Section 21-4-69, is drilling at 200 feet. Its No. 2 State, C NW, Section 16-4-69, has steel derrick up, and its No. 1 Gillette, NW cor. NE, Section 21-4-69, has rig completed. Stanley M. Barrows' No. 1 Munroe, C NW NE, Section 26-11n-69, Round Butte, is shut down at 1,050 feet.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is drilling at 3,874 feet in hard sandstone which is showing a little gas in the bailer and rainbows of oil.

Huerfano County

Parker Club, Inc.'s No. 1 fee, Section 4-28s-68, Badito-Alamo Dome, is bottomed at 4,115 feet and sidetracking last two joints of collapsed 5⅞-inch.

Fremont County

Waterville Oil Co.'s No. 1 State, SE cor. NW, Section 16-18s-69, which has been idle for nearly a year, is reported resuming and drilling at 1,215 feet. It started in the red beds with the Pennsylvanian sands as the objective. It is north of the Florence-Canon City Pools which produce from shale above the Dakota.

Moffat County

Mountain Fuel Supply Co.'s No. 2 State, SE NE, Tract 37-12n-100, Hiawatha Dome, is bottomed at 2,202 (corrected) feet and cleaning out after repairing damage by fire. A sand containing gas was encountered at this depth.

WYOMING

Converse County

The Ohio Oil Co.'s test of the Lakota sand in the Big Muddy Field east of Casper in its No. 5 Jones, NW NE NE, Section 9-33-76, swabbed 1,000 bbls. in 40 hours from a total depth of 4,357 feet. 12 feet in the sand, or at the rate of 600 bbls. a day. At this depth a change over from rotary to cable tools was made to drill deeper into the sand. It will make 1 to 2 feet at a time and stop to test, but probably will not go much deeper to avoid danger of running into water. It is probable another well will be drilled to go through the sand. It is now drilling at 4,358 feet. There is a difference of opinion as to the probable thickness of the Lakota. Near Casper Mountain to the east of the Big Muddy the sand is about 80 feet at the outcrop. Estimates of its thickness in the field range from 40 to 80 feet.

Reports generally credit this well with being the discovery well in the Lakota, but there is some question about it. The first deep test was drilled by the Midwest Refining Co. for the Merritt Oil Corp. in its No. 32, SW NE, Section 8-33-76, in 1922. John G. Marzel, state geologist of Wyoming, reports this well made 250 bbls. daily in the Dakota at 4,203 feet, the oil testing 36.4 degrees on the Baume scale. This well was reported, he says, to have reached the Lakota at 4,362 feet and to have made 50 bbls. of asphaltic base oil. Continental Oil Co. drilled in 1927 in its No. 39-A, SE NW, Section 8-33-76, and completed the well in the Dakota at 4,260-4,300 feet, flowing 300 bbls. a day. The Lakota, which was reached by the Ohio well, lies immediately below the Dakota. The oil in the Wall Creek sands at 3,200-3,400 feet averages 35.5 degrees gravity, while that in the Dakota is a little better and tests 36.4 degrees. The Lakota oil in the Ohio's well is 32.5 degrees.

Natrona County

Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, Midway

(Continued on Page 93)

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Pessimism in California Is Softening

Effort to Negotiate Satisfactory Sales for Crude Oil Making Progress. Lost Hills Curtailment Proposal Discussed

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 4.—The pessimistic outlook resulting from the substantial reduction in the posted price of crude oil on March 30 has been softened somewhat by the rapidity with which organization plans are being perfected by the Independent Producers Sales Agency, as operators expect to secure some degree of relief through the efforts of this association which will attempt to negotiate satisfactory sales contracts for the disposal of crude oil. The sponsors of this organization recently met with a group representing major companies in an effort to effect a mutual understanding, and, while no definite program regarding future production was decided upon, it is understood most of the major companies are sympathetically inclined toward the new association and will make every effort to co-operate with it for the common good of all concerned. Of course no general improvement can be effected immediately as it will take some little time to complete organization plans and bring about the consummation of the association's objectives. William C. McDuffie, president of the Pacific Western Oil Co. and receiver in equity for the Richfield Oil Co., is favored to become the head of the Independent Producers Sales Agency if he wishes to assume this position.

To Harmonize Price Structures

The most interesting subject of discussion at present centers around just how long the existing chaotic condition will continue. Some are inclined to believe an early recovery may be anticipated, while other well-informed oil men do not expect any general readjustment within 90 days. Heretofore, conditions have been kept somewhat under control, whereas now the situation is characterized by the existence of numerous diversified interests. This is of importance because it may retard any immediate readjustment in crude and refined oil price schedules. It is the feeling among field men that if independent refiners increased gasoline prices major refiners would undoubtedly fall into line, with the result that a fairly uniform price structure would be created. The chief difficulty along this line is the inability of major refiners to talk prices because of existing antitrust laws and a reticence of the independent group to increase prices because independent refiners are just as much at variance as the major group. One thing appears certain, however, as a result of the recent downward revision of crude oil prices, and this is that major refiners have adopted the policy of meeting competition on an equal price basis and will, in accordance with this plan, harmonize price structures of crude and refined oils.

It is significant to note while commenting on crude oil prices that neither the Standard nor Union posted a schedule for Kettleman Hills and Playa Del Rey. No announcement was made regarding the omission of these schedules but it appears logical to assume neither company is in the market to purchase oil in these areas as no prices were offered for crude. Both the Standard and Union are running oil out of Playa Del Rey and Kettleman Hills. It is reliably reported the Union has entered into a private agreement with the Superior Oil Co. to handle the latter's production at Kettleman Hills on a co-operative basis. At Playa Del Rey the company is reported to have made a similar agreement with the Barnsdall covering its current production. No official announcement has been made by any of the parties concerned and consequently no details are available. The Standard Oil Co. is in somewhat a similar position at Playa Del Rey as it is running the Ohio Oil Co.'s current production in this field. The General Petroleum's price schedule, which became effective April 1, quotes a flat price of 56 cents per barrel for Playa Del Rey crude subject to a field gathering charge of 5 cents per barrel, so that producers are paid on the basis of 51 cents per barrel. Both the General Petroleum and Associated will pay 35 cents per barrel for crude oil at Kettleman Hills testing 30° and above. With one or two exceptions, crude oil price schedules of major refiners coincide with respect to quotations.

Lost Hills Curtailment

Operators in the Lost Hills Field of Kern County met in Los Angeles during the week to discuss plans for oil curtailment and future operations in that area. This meeting, attended by practically all operators holding productive and potentially productive acreage in that field, was particularly timely as it was deemed advisable to formulate definite plans previous to the completion of any well in the possible deep zone. J. A. Bermingham of The Texas Company was elected temporary chairman of the group and V. H. Wilhelm secretary. A committee of engineers consisting of C. R. McCollom, Pacific Western Oil Co.; E. G. Gaylord, Standard Oil Co.; G. S. Follonsby, Universal Consolidated Oil Co.; B. E. Parsons, General Petroleum Corp., and T. E. Swigart, Shell Oil Co., was appointed to study operating conditions and prepare recommendations for submission to the entire group in the near future. Although the policy to be followed with respect to future operations in the Lost Hills Field was left open, it appears probable the engineering committee will recommend a program contemplating unit development subject to the proving of a new lower horizon. This will probably be patterned somewhat along the line in effect at Kettleman Hills. Simultaneously with this program to consolidate and unify operations in the Lost Hills Field, operators in the North Belridge Field are working on a similar plan and a definite recommendation is expected to be made in the future. It is assumed the Middle Dome at Kettleman Hills will likewise be brought under unit control if either of the two wells now drilling proves the existence of deep Temblor production.

Playa Del Rey

The Ohio Oil Co.'s No. 2-L Del Rey, finished late last week, subsequently built up to 2,000 bbls. of 23.5 gravity oil from 6,219 feet and was still going strong when brought under curtailment at the expiration of the customary five-day flow test. This well was a recompletion, having been redrilled and deepened from 5,719 feet, from which point it was originally completed doing 270 bbls. The significance which attaches to the substantial production secured by this well upon recompletion lies in the fact that it may result in the deepening of other deep wells in the Playa Del Rey Field. Heretofore, operators concluded drilling operations upon encountering the Schist on the assumption that this hard formation definitely marked the bottom of production. The Ohio's new well appears to throw a different light on the subject as it was drilled into the Schist for a depth of approximately 500 feet, with the result that a 270-bbl. pumper was changed into a flowing well doing 2,000 bbls. The Ohio has not released any data covering the well's log after leaving the top of the Schist but this appears quite unnecessary in view of the spectacular performance of the well. Operators are interested in ascertaining, however, whether the Schist contained oil sand within itself or whether the company drilled entirely through the Schist and picked up a new zone below this hard formation.

The existence of Schist in the Playa Del Rey Field with oil sand immediately overlying it has been the subject of considerable discussion for a long time as it is rather unusual to find an oil sand immediately on top of Schist or granite. The results attained by the Ohio in No. 2-L indicate this hard formation, Schist, must be intrusive in character, especially if a new deep zone has been discovered below the present deep Recreation zone. Subsurface conditions are quite unconformable throughout the Playa Del Rey Field and core samples from several wells definitely indicate faulting, although adjoining projects subsequently failed to reveal any great displacement. It is almost impossible to work out a series of production contours because of the lack of uniformity and when placed on paper they failed to show any definite general trend. The Ohio Oil Co.'s recent completion, No. 2-L, may become a factor of more importance than many expect at present because if a new deep zone has been discovered it will lead to considerable deepening work. Drilling operations in this field are rather negligible and field production is headed for a lower level unless deepening operations are stimulated by the Ohio's new well and subsequent exploration. C. Ed Lewis successfully completed No. 5 Wolfe in the Recreation zone flowing 370 bbls. of exceptionally clean 23.9 gravity oil from 5,805 feet. J. D. Langford also finished a new well in the deep zone at Playa Del Rey during the past seven-day period but this new producer, No. 1 Del Rey, was only good for 215 bbls. on the beam from 6,110 feet.

Huntington Beach

W. E. McCaslin appears to have confirmed the deep zone discovery of the Superior Oil Co. in the Huntington Beach townlot section, as his No. 17 Transport is showing considerable oil and gas on the ditch at 7,500 feet. This deep zone exploratory well, with a string of 4¾-inch landed at 6,887 feet, is expected to be given a production test probably within two weeks. The potentiality of this new deep zone will not be actually determined pending a conclusive test, but recent developments indicate the expectation of developing substantial commercial production. The Superior Oil Co. with its deep zone discovery, No. 1 Fee, standing cemented at 7,648 feet, would certainly not be carrying two other wells down to the deep zone if it was not convinced it presented unusual possibilities. A number of other operators, including the Union and Wilshire, are also making preparations to engage in deep zone exploitation if present work in the town lot area is successful. Present deep zone exploration in the town lot section will have a direct bearing on future operations of the Standard Oil Co. in this area because its diversified holdings in the subdivided area and the lease which it holds on the Pacific Electric's right of way paralleling the ocean front. The Standard finished No. 6 Jones at Huntington Beach and this well, bottomed at 4,381 feet and finished with a 9-inch oil string carrying 915 feet of perforated, was brought in pumping 150 bbls. of 27.5 gravity oil.

Long Beach

Drilling operations in the Long Beach Field have registered a substantial decline during the past few months, and, while several potential producers are scheduled for early completion, development work is expected to show a consistent decline during the next several months. Numerous incompleted drilling projects have been suspended in this field. The only well put on production in this field during the week was T. J. Cannon's No. 4 Hall-Weber which has been on a provisional production test for the past 15 days. Daily production has built up from 200 bbls. to 420 bbls. during this period, and, although the output is cutting 50 per cent, it will remain on the pump at 5,075 feet for an indefinite period. The Knowlton Oil Co.'s No. 1 Athens in the Rosecrans Field of Los Angeles Basin, finished at 4,780 feet, has failed to show any substantial increase in production and the success of the extended production tests being made remains to be seen as the well is pumping only 180 bbls. of 36.1 gravity oil, cutting 10 per cent. At 35 cents per barrel, this well can hardly be considered as a commercial producer. The Brea Canyon Oil Co.'s deep test in the Brea Olinda Field of Los Angeles Basin has reached 6,180 feet with nothing of importance logged. In the Dominguez Field, No. 3

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.. ..	.....	.....	77,405
Fuel oil	.. ..	.. ..	.....	.. ..	.....	71,950
Diesel and gas oil	....	....	.....	.....	679,024	1,214,712
Gasoline	193,725	27,675	358,395	51,199	3,636,251	4,141,600
Coastwise—						
Crude oil	462,075	66,011	739,873	105,952	4,994,538	3,636,932
Fuel oil	117,518	16,789	328,133	46,876	3,793,099	4,579,778
Diesel and gas oil	5,479	783	42,312	6,045	400,592	559,826
Gasoline	262,185	37,455	....	.....	2,743,149	2,646,050
Kerosene	....	.....	20,526	2,932	106,471	18,714
Naphtha distillate	4,952	707	.....	.....	4,952	.....
Exports—						
Crude oil	271,259	38,751	149,467	21,352	1,841,038	1,795,366
Fuel oil	438,906	62,701	33,682	4,812	3,696,672	4,262,407
Diesel and gas oil	151,735	21,676	64,937	9,277	961,734	1,295,384
Gasoline	100,943	14,420	96,749	13,821	2,229,708	3,784,311
Kerosene	.....	.....	68,610	9,801	305,814	847,497
Lubricants	.....	.....	.....	.....	6,928	5,057

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	88,280
Gasoline	.....	.....	.....	.....	62,975	285,245
Lubricants	.....	.....	.....	.....	11,000	.....
Coastwise—						
Fuel oil	110,162	15,737	74,400	10,629	1,035,460	847,559
Diesel and gas oil	73,622	10,517	6,911	973	88,756	82,605
Gasoline	136,976	19,568	73,661	10,523	702,844	1,074,055
Kerosene	6,177	882	.....	.....	30,006	96,330
Exports—						
Crude oil	.....	.....	.....	.....	6,010	3,075
Fuel oil	.....	.....	.....	.....	198,876	236,203
Diesel and gas oil	.....	.....	1,481	211	127,617	124,540
Gasoline	87,461	12,494	183,502	26,215	797,824	929,687
Kerosene	.....	.....	.....	.....	190,412	162,499

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PIPE line operations drive ahead at top speed because men are right there all day long—literally on top of the job, every minute of every day.

Exactly the same proposition with compressor equipment! When you want compressed air, you want *lots* of it, in a steady, dependable supply; and that means a compressor exactly on the spot—not doing absentee duty at the far end of a rambling discharge line!

In other words, a *Davey* Compressor, mounted for quick, economical travel. That may mean "Caterpillar" Tractor unit, with Compressor operated by a power take-off from the tractor motor.

It may mean Fordson Tractor mounting, or wheeled trailer—where the ground is fairly even—or skids, or any one of many other convenient mountings—

But always "Davey" means *portable compressed air*—delivered right at the tools and the job.

Of course, "Davey" means a lot of other important things, too. For example, Davey Air is *cool* air—*kept* cool because instead of water-jackets to *confine* the heat, Davey Compressors contain aluminum alloy parts that pull heat from inside the compressor heads and cylinders, right out into the air, where it blows away.

With cool air, valves cannot become fouled. Carbon removal is never necessary with Davey Compressors. Aluminum construction, and absence of excess piping and water, reduce weight by many hundreds of pounds. Highest grade automotive engineering throughout, makes "Daveys" the real quality leaders among air-compressors.

Davey Compressors are an established success—we gave them over 5 years of the hardest work-out before offering them to the trade. "Four Air Compressors Went to School" gives amazing facts. Use the coupon to bring *your* copy, with catalog. No obligation.

Where Tractor-mounted "DAVEYS" *fit in on Pipe Liners' jobs*

1. Felling trees on right of way with air driven chain saw. Same tractor then skids trees off to one side.
2. Operating jack hammers and other percussion tools for removal of shale, rock and highway pavement.
3. Using rotary wire brushes to clean rust and temporary compounds off pipe before painting.
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5. Furnishing air for oil burning furnaces that bend pipe.
6. Spraying permanent coats of paint on pipe.
7. Forcing pipe through embankments.
8. Operating rotary tool grinders.
9. All other ordinary compressed air uses.

Note: "Caterpillar"-mounted Davey is available for drawbar operations when not being used to pump the compressor.

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O&GJ 4-9-31

Childs of the Shell Oil Co. is rotating in a hard gray sand streaked at intervals with oil sand for the past 50 feet. This well is down 7,620 feet. The Continental Oil Co.'s deep test, No. 24 Selover in the Seal Beach Field of Los Angeles Basin, was drilling ahead a few days ago in a hard brown shale at 8,925 feet. This is the deepest test drilled in the Seal Beach Field, and, while several minor showings were logged higher up in the hole, they were not of sufficient thickness to justify expectation of resulting in commercial production.

The Standard Oil Co. is reaming its No. 1 Bastanchury, a deep test along the edge of the Coyote Field, preparatory to landing a string of pipe. This well, bottomed at 8,144 feet but subsequently plugged back to 7,922 feet, recently showed considerable gas and some oil, indicating the possibility of resulting in commercial production. The Gleck Oil Corp. has staked a location for a wildcat to be drilled in Section 20-5-11, about midway between the Huntington Beach and Seal Beach Fields, and an early spud is contemplated. The Standard and Shell both prospected this general aren without success a few years ago. At Hermosa Beach, the Westwood Oil Producers Co. has been coring streaks of oil sand for the past 300 feet but has not yet uncovered a sufficient amount of sand to justify a production test.

In Control at Kettleman Hills

The Kettleman North Dome Association assumed actual control of wells and equipment in the Kettleman Hills Field on April 1, when it took over the field camp of the Milham Exploration Co. in Section 34-22-17, including the bunkhouses, emergency hospital and other camp equipment. The Kettleman North Dome Association, a duly incorporated company operating under the laws of California, started off its corporate existence with two wells, one being the Milham company's No. 1 Elliott in Section 2-22-17 producing 1,375 bbls. per day, and the other the Continental's No. 1 Elliott in Section 12-22-17 producing 1,890 bbls. per day. The association, which automatically absorbed the drilling crews in the North Dome, should finish several new wells within the next few months and will thus be in a position to redrill and deepen both of its present producers from the Elliott to the underlying Ochsner zone. The Kettleman North Dome Association controls 10,800 acres of productive and potentially productive acreage in the North Dome. Of this amount, 2,500 acres belongs to the General Petroleum, 1,980 acres to the Continental Oil Co., an additional amount to the Milham Exploration Co., 1,440 acres to the Pacific Western and Kettleman Oil Co., 800 acres to George F. Getty, Inc., 520 acres to the Shell Oil Co., 340 acres to the Belmont Investment Co., 240 acres to the Associated Oil Co., 160 acres to the Lincoln Drilling Co., 120 acres to the L. G. Helm and S. L. Gillan, 100 acres to the Amerada Corp., 20 acres to the Associated Oil & Pioneer Kettleman Co. and 200 acres each to the Petroleum Securities, Pioneer-Kettleman Co. and Standard Oil Co. General Manager Reinhardt of the Kettleman North Dome Association considers the new experiment in unit development by the Kettleman North Dome Association as the "dawn of a new era for the oil industry as unified development permits orderly development preventing upsets in the market situation, economic waste and excess production, thus cutting down costs. In such a field previously individual owners were compelled to drill in order to prevent other operators on adjoining property from draining their holdings. With property owners grouped, as in the North Dome Association, such drilling will not be necessary."

During the month of February, 1931, operators in the North Dome of Kettleman Hills recovered 11,746,078 gallons of natural gasoline. This production came from five natural gasoline plants operated by the Standard, Superior, The Texas Company, Los Nietos Gasoline Co. and the Western States Gasoline Co. During the month these plants averaged approximately 155,000 gallons, 40,000 gallons, 60,000 gallons, 55,000 gallons and 109,000 gallons per day, respectively. There are seven natural gasoline plants in the North Dome with a capacity of approximately 800,000,000 feet per day, although only about 390,000,000 feet are being handled at the present time. Three of these plants owned by the Standard have daily capacities of approximately 135,000,000 feet, 135,000,000 feet and 100,000,000 feet. The Superior's plant and that of the Los Nietos Gasoline Co. are capable of handling approximately 100,000,000 feet each every 24 hours. The Texas Company's natural gasoline plant in the North Dome has a rated capacity of approximately 90,000,000 feet daily, while the Western States company's installation is rated at 140,000,000 feet per day. The Texas Company is taking the natural gasoline produced at its own plant, together with that produced by the Superior, while the Union is taking delivery of natural gasoline from the Los Nietos plant and the Western States Gasoline Co.

MISSAUKEE COUNTY WILDCAT SHOW FEATURE OF THE WEEK IN MICHIGAN

By Paul A. Elliott

MUSKEGON, Mich., Apr. 4.—A show of gas which blew the water out of a 3,000-foot wildcat in North Central Michigan this week was struck at about 2,800 feet, it was announced by Henry Miltner. The well had been drilled 200 feet after first striking gas several weeks ago in what was believed to be the upper Traverse. The flow will be tested before deepening. The well is Miltner and others' No. 1 Miller, NW NE NE, Section 24-24n-7w, Pioneer Township, Missaukee County, near the village of Pioneer.

C. R. Smith, trustee's No. 1 J. Jorgensen, SE NW, Section 21-22n-9w, Haring Township, Wexford County, north of Cadillac and about over the deepest point on the Michigan Basin, is drilling in salt at more than 3,800 feet. Gas estimated good for 2,000,000 feet open flow was struck several weeks ago.

No completions were made in either the Muskegon or Mount Pleasant Fields during the week and no new permits were issued.

Three Pure Oil Co. wells, No. 2 Ed and Thomas Sawade, SW SE, Section 2-14n-3w, Chippewa Township, Isabella County, No. 3 "B" Iosco Land Co., NE SW, Section 8-14n-2w, Greendale Township, Midland County, and No. 4 Fred B. Sias, NE SW, Section 2-14n-3w, Chippewa Township, are nearing completion in Mount Pleasant.

A new extension well has been started by the Pure company, No. 1 Alvin Anthony, NE SW NE, Section 17-14n-2w, Greendale Township. Work has been started on the Deerfield-Nottawa Oil Co.'s No. 1 Charles E. Smith, SW cor. SE NE, Section 35-15n-5w, Nottawa Township, Isabella County. J. C. Arthurs Drilling Co. is the contractor.

Muskegon operators await new developments in the vicinity of Montague and Whitehall, about 10 to 15 miles northwest of the proved field.

Eight-inch casing was landed on the H. and W. Feicke's No. 1 Feicke, SE SW, Section 1-11n-17w, Fruitland Town-

(Continued on Page 105)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	5,050	sd. sh. drilling
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	4,910	fishing
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,233	suspended
Mesmer City Corp., No. 1 Mesmer, Los Angeles Co.	24- 2-16	4,175	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	suspended
Allison Synd., No. 1 Baldwin, Los Angeles Co.	3- 2-14	5,110	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,300	suspended
Cal. Oilfields Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,560	sd. sh. drilling
Corniel Oil Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,214	suspended
Hermosa Expl. Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,006	sd. sh. drilling
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	2,375	sd. sh. drilling
Tulsa Oil Co., No. 1 Hermosa, Los Angeles Co.	6- 4-14	1,011	sd. sh. drilling
Thorpe Pet. Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	2,149	sd. sh. drilling
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	780	suspended
Shelley, C. M., No. 1 Torrance, Los Angeles Co.	12- 4-14	rig	suspended
York & Smullin, No. 1 Watson, Los Angeles Co.	29- 4-13	3,121	sd. sh. drilling
Mack Oil Co., No. 1 Chatsworth, Los Angeles Co.	6- 2-16	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	cleaning out
San Van Oil Co., No. 1 Van Nuys, Los Angeles Co.	14- 1-16	2,124	recemented
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,000	sd. sh. drilling
Arden Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,092	suspended
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	1,370	sd. sh. drilling
The Texas Company, No. 1 Montebello, Los Angeles Co.	4- 2-12	2,665	hd. sd. drilling
Huntington Cent. Oil Co., No. 1 Montebello, Los Angeles.	24- 1-11	mtl.	building rig
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	28- 1-12	5,378	suspended
Hammer, Fred, No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,412	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Rancho Oil Co., No. 1 Rosemead, Los Angeles Co.	30- 1-11	5,377	sd. sh. drilling
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	to abandon
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	....	location
Nesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Gesell, T. F., No. 1 Newport, Orange Co.	29- 6-10	1,403	sd. sh. drilling
Standard, No. 1 Newport, Orange Co.	26- 6-10	4,071	hd. sd. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,690	cleaning out
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	5,250	suspended
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	2,598	hd. sd. drilling
The Texas Company, No. 1 Olive, Orange Co.	7- 4- 9	3,920	sd. sh. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	6,000	sd. sh. drilling
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	6,170	cleaning out
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	3- 7-33	1,800	suspended
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	4,715	Sespe form.
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	3,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Southern Calif. Drlg. Co., No. 1 Goleta, Santa Barbara Co.	12- 4-28	mtl.	building rig
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	4,191	recemented
Caldwell, Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,100	redrilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	19- 4-27	1,295	sd. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	12-10-27	rig	suspended
Johnson, George, No. 1-A Goleta, Santa Barbara Co.	27-10-26	rig	suspended
Cuyama Oil Corp., No. 1 Cuyama, Santa Barbara Co.	20-10-35	5,500	suspended
Hart Pet. Co., No. 1 Cuyama, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
C.C.M.O. Co., No. 2-A Rincon, Ventura Co.	23- 3-24	3,960	br. sh. drilling
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	1,570	hd. sd. drilling
Associated, No. 1 Fillmore, Ventura Co.	16- 4-20	....	material
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	6,110	sd. sh. drilling
Lockwood Valley Oil Co., well No. 1, Ventura Co.	32- 8-21	1,015	suspended
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	2,140	hd. sd. drilling
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	cemented
Kent & McDonald, No. 1 Temblor Hills, Kern Co.	3-32-22	1,672	suspended
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,367	cleaning out
General Pet., No. 1 Beiridge, Kern Co.	30-28-21	4,000	br. sh. drilling
The Texas Company, No. 1 Beiridge, Kern Co.	22-27-20	5,045	suspended
Standard, No. 2 Beiridge, Kern Co.	31-27-20	5,150	br. sh. drilling
Ohio Oil Co., No. 1 Beiridge, Kern Co.	36-27-20	5,980	testing
Reward Oil Co., No. 1 Beiridge, Kern Co.	34-27-20	4,525	sd. sh. drilling
Union, No. 17 Beiridge, Kern Co.	26-27-20	5,541	recemented
Continental, No. 1 Beiridge, Kern Co.	36-27-20	2,100	sd. sh. drilling
Casa Mira Oil Co., No. 1 Beiridge, Kern Co.	29-28-20	rig	suspended
Tom Cannon, No. 1 Beiridge, Kern Co.	18-28-22	rig	suspended
Wallace, K. C., No. 1 Beiridge, Kern Co.	32-29-21	4,220	cleaning out
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy, No. 1 Arvin, Kern Co.	12-30-28	1,250	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	3,040	hd. sd. drilling
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	6,200	sd. sh. drilling
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	4,712	sd. sh. drilling
Osborn-Colter, No. 1 Weed Patch, Kern Co.	15-30-29	mtl.	building rig
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	5,966	redrilling
Mohawk Oil Co., No. 2 Weed Patch, Kern Co.	4-31-29	480	sd. sh. drilling
Alpine Oil Co., No. 1 Weed Patch, Kern Co.	13-31-29	1,911	sd. sh. drilling
Standard, No. 1 Devils Den, Kern Co.	14-26-18	2,719	br. sh. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,900	br. sh. drilling
Langstroth, F. B., No. 1 Blackwell Corner, Kern Co.	14-26-19	mtl.	building rig
E. J. Miley, No. 1 Blackwell Corner, Kern Co.	17-26-19	mtl.	building rig
Shell, No. 1 Semitropic, Kern Co.	17-27-23	9,700	cleaning out
Cities Service, No. 2 Wasco, Kern Co.	16-28-24	702	core hole
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	750	suspended
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,804	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	5,530	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	4,390	br. sh. drilling
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	314	suspended
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	redrilling
Tray El Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-32-22	1,205	cleaning out
Latin Amer. Synd., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	5,040	hd. sd. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	916	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	suspended
Schockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	2,530	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	1,140	hd. sd. drilling
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	suspended
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	rig	rigging up
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	3,750	testing
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,304	suspended
Purman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	2,574	cleaning out
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	6,456	sd. sh. drilling
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	1,970	hd. sd. drilling
Pettingall, C. E., No. 1 Porterville, Tulare Co.	15-22-27	530	sd. sh. drilling
Knapp, George, No. 1 Porterville, Tulare Co.	20-22-27	570	sd. sh. drilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	cleaning out
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	850	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,110	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	2,510	sd. sh. drilling

Flows 859 Bbls. in 30-Minute Test

Gulf Production Co. Has Largest Well in Kilgore Field. Interesting Tests Near Completion on Outside Acreage

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 6. — The three most interesting tests in the East Central Texas district are confined to Gregg County, Shelby Oil & Gas Co.'s No. 1 Snavely, in the Tyndale Survey, south of the town of Gladewater, holding the stage at the present writing, as it is ready to be drilled in after having been cased and shut down for the past week at a total depth of 3,583 feet. This test cored 10 feet of sand, and consequently is regarded as a producer and a 4-mile western extension to the Lathrop Pool.

Another most interesting test is the Heep Oil Co.'s No. 1 Barber, in the William McCurry Survey, approximately 3 miles northeast of Elliott and others' No. 1 Andrews which was completed this week for a 3-mile extension to the Kilgore Pool. No. 1 Barber cored several inches of sand at 3,510-15 feet, and at 3,515-24 feet, the sand top showing up at 3,512 feet. Total depth is 3,536 feet. Not enough sand has showed up to insure making a commercial producer out of the test, but another core was to be taken. If this test is completed as a commercial well it will practically prove the linking of the Kilgore and Farrell-Lathrop Pools for the Foster and East Texas Refining Co.'s No. 1 Fisher, in the John Ruddle Survey, is only 5 miles farther to the north, this well making over a 3-mile southwestern extension to the Lathrop Pool in the direction of the Kilgore Pool.

The Alco Royalty Co.'s test on the J. R. Castleberry estate in the Castleberry Survey, is midway between the Fisher producer on the north and the Barber test, but is considered as slightly east of the line dividing the producing and dry territory and may miss the sand. It is now drilling at 3,515 feet, believed to be in Georgetown lime which is a dry-hole marker in that part of the district, and if this is the case the test may be eliminated from the production list.

3-Mile Extension

Elliott and others' (Lloyd Oil Corp.'s) No. 1 S. G. Andrews, in the W. F. Hyde Survey, extended the Kilgore Pool 3 miles farther north this week when it came in for an initial production of 600 bbls. the first hour and 10 minutes at a total depth of 650 feet. The sand was cored from 3,640-50 feet.

Dry Hole in Upshur County

De Armand and others' No. 1 Fluellan in the Marshall Mann Survey across the northern Gregg County line in Upshur County was abandoned this week marking the northern limits of production which was thought might be extended when this test was reported as having cored sand from 3,775-79 feet. However, this sand failed to produce and the test was drilled to a total depth of 3,864 feet picking up no more sand. It was abandoned at this depth.

Tidal Oil Co.'s No. 1 Castleberry, in the William Robinson Survey, approximately 1¼ miles northeast of production in the Lathrop Pool, topped the Austin chalk at 3,545 feet and is drilling ahead at 3,580 feet. This throws the test running about 20 feet lower than the discovery well, but 5 feet higher than Eslick, Brown and Little's No. 1 Church Lot well to the northwest, consequently it is enigmatical in regard to its correlations.

Another Dry Hole

Another east side dry hole showed up this week when Youngblood, Trustee's No. 1 Lamb in the David Ferguson Survey, a mile east of Pine Tree in the Lathrop area, Gregg County, topped the Georgetown at 3,535 feet with a surface elevation of 393 feet. This helps to substantiate the theory that a fault may be proven running from north to south through Gregg and Rusk Counties and that any tests drilled on the east side of a line drawn just to the east of the Lathrop Pool down through Gregg County to the Byrd and others' No. 1 Elder, northeast of Kilgore, will be dry, and tests drilled to the west will prove productive. This has been substantiated by several tests to date, and the theory is becoming stronger and stronger in the minds of many. Clark and others' No. 1 Mercer and Cres in the M. A. Young Survey, 3 miles east of the Bateman Pool near the Gregg-Rusk County lines, helps to uphold this theory, for it too has topped the Georgetown lime at 3,551 feet and is presumed to be a dry hole.

Heep Oil Co.'s No. 1 Bean in a 20-acre tract in the J. Lewis Survey, slightly over one-half mile east of Smith and others' No. 1 Peterson producer, extended the Bateman or Kilgore Pool to the east this week when it came in making 34 bbls. in one hour through a one-eighth inch choke on tubing.

Best Well in Field

The Gulf Production Co. brought in the best well of the week this week, and so far the best well of the three new East Central Texas pools in Rusk and Gregg County, when it completed its No. 1 Griffin on a 15-acre tract in the Isaac Ruddle Survey for an initial flow of 859 bbls. in a 30-minute period, or at a rate of better than 41,000 bbls. per day. This well is located in the northern part of Kilgore Pool near the Rusk-Gregg County line.

Pearl Oil Co.'s No. 1 Eaton in the Francisco Cordova Survey, approximately 1½ miles northwest of production in the Joiner Field, topped the Woodbine sand at 3,681 feet and is shut down waiting for casing. This no doubt presages another extension to the Joiner Pool, and in a direction leading to the Kilgore Pool in the northwestern part of the county. Top of the Austin chalk was cored at 3,596 feet. By this time it would appear that but few were still holding out the theory that this district would produce from sand lens as the three pools are being knitted closer together by new producers being completed each week extended the pools towards each other, and also in other directions.

New Refinery Project

It was reported that Gladewater on the western side of Gregg County would receive a small refinery, construction to start in the near future. Kouri and associates of Wichita Falls, Tex., were named as the parties who will erect this refinery which will process Gregg County crude. Selby Oil & Gas Co.'s No. 1 Snavely, 1½ miles southeast of the town, has practically proved that production will be extended to the backdoor of the town, and a skimming plant at Gladewater will therefore be strategically located near production.

Gas Lift Being Used

The Sinclair Oil & Gas Co. continues to experiment with gas lift on its Holland lease in the Joiner Pool using three Waukesha motors and three Ingersoll-Rand compressors to inject gas from three wells into one small producer thereby raising the production in this well from 90 to 200 bbls. per day. About 1,500,000 feet of gas per day is being used in this experiment.

The Mid-Kansas Oil & Gas Co., which has one producer in the Joiner Pool and several leases in the area, is laying a combination 4 and 6-inch line from its producing well and lease in the Prue Survey to a loading rack at Friar's Switch on the I.&G.N. Railroad.

The Central Pipe Line Co. completed its 6-inch line from the Joiner Pool to the loading rack at Overton. This was a Dillon coupled line, and was laid by G. F. Beckler.

Production of the three pools in Rusk, Gregg and Smith Counties is now running over 175,000 bbls. per day, increase each day as many wells are brought in during the week. Fifty-five locations were reported in the three counties for the week.

EAST CENTRAL TEXAS PRODUCTION

Boggy Creek	2,530
Cedar Creek	20
Currie	250
Hill County	30
Mexia	3,414
Nigger Creek	135
Powell	4,368
Richland	80
Rusk and Gregg Counties	143,870
Van	35,559
Wortham	465
Total	190,721
Week ended March 28	165,749
Increase	24,972

EAST CENTRAL TEXAS WILDCATS

Week Ending April 4

CHEROKEE COUNTY

Company, well, farm name, section and block—	Remarks:
McDonald Bros.' No. 1 Newton, center of 113-ac. tract, Thomas Quevedo Sur., 3 miles N of Jacksonville	Derrick.
R. G. Baker et al's No. 1 M. M. Tommie, 945 ft. N and 1,300 ft. E, William George Sur.	Shut down 4,003 ft.

DELTA COUNTY

Delta Development Co.'s No. 2 Hays Kinney, 300 ft. S of No. 1 Cooper, Townsite Sur.	Shut down 2,235 ft.
D. S. Hoods' No. 1 J. J. Balser, 185 ft. from S and 580 ft. W of Balser 40-ac. tract in SE cor. T. B. Laddin Sur.	Shut down 2,650 ft.
Everett Drlg. Co.'s No. 1 Sansivy, 1,320 ft. N and 1,320 ft. W, J. B. Craig Sur.	Shut down 3,335 ft.
Worthington and Stedman's No. 1 W. H. Dejehett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur.	Shut down 2,300 ft.

GREGG COUNTY

Alco Royalty Co.'s No. 1 J. R. Castleberry estate, 150 ft. from N and 1,950 ft. from E of survey	Drill stem test 3,431-92 ft.; dry.
Angle and Bytex' No. 1 C. R. Parker, 510 ft. from N and 150 ft. from E, James F. Dixon Sur.	Building derrick.
Arkansas Fuel Oil Co.'s No. 1 P. D. Harrison, 150 ft. S and 410 ft. E of SW cor. of Tenery 40-ac. tract, William Robinson Sur.	Set 6⅝-in. csg.; T. D. 3,540 ft.
Arkansas Fuel Oil Co.'s No. 2 P. D. Harrison, 282 ft. S and 143 ft. E of SE cor. of Tenery 40-ac. tract, William Robinson Sur.	Derrick pattern.
Crump and Hanagan's No. 1 Dallas Caldwell, 150 ft. from S and N offset to East Texas' No. 1 Fisher, John Ruddle Sur.	Drlg. 2,670 ft.
Bell & Graddy's No. 1 M. George (or Daniels), 225 ft. S and 650 ft. W of 26-ac. tract, Mary Van Winkle Sur.	Waiting on csg.
Blackwell Oil & Gas Co.'s No. 1 Mrs. Maggie Magrill, 4,250 ft. from S and 6,500 ft. from W of survey, Dolores Sanches Sur.	Rig up.
W. H. Byrd, Jr.'s No. 1 Art Mitchell, 150 ft. from E and 150 ft. from S of 15-ac. lease, 1,300 ft. from S and 850 ft. from E of survey, John Carithers Sur.	Fishing 2,875 ft.
D. H. Byrd and Gulf Prod. Co.'s No. 1 Canimaras Bros., 5,505 ft. from NW, 1,528 ft. from NE of 817.6-ac. tract, 1,820 ft. from N, 2,505 ft. from W of survey, Harden Edwards A-64 Sur.	Rig up and shut down.
Cranfill & Reynolds' No. 1 G. L. Rembert Co., 150 ft. from N and 150 ft. from E of 166.5-ac. tract and 86-ac. tract, John Ruddle Sur.	Derrick.
Cranfill & Reynolds' No. 1 Solon King, 150 ft. from E line and 275 ft. from the S line of lease, W. P. Chisum Sur.	Drlg. 2,820 ft.

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COMPLETIONS IN EAST CENTRAL TEXAS

Gregg County

Arkansas Fuel Oil Co.'s No. 1-B F. K. Lathrop, oil sand 3,590-3,608 feet, initial production 234 bbls. first 30 minutes on 1-inch choke, total depth 3,608 feet. Same company's No. 2-A F. K. Lathrop, oil sand 3,590-3,611 feet, initial production 305 bbls. first 30 minutes, total depth 3,612 feet. Same company's No. 3-A F. K. Lathrop, oil sand 3,582-3,605 feet, initial production 388 bbls. first 30 minutes, total depth 3,605 feet. Lloyd Oil Corp.'s No. 1 S. G. Andrews, top sand 3,640-50 feet, initial production 600 bbls. first hour and 10 minutes, total depth 3,650 feet.

Henderson County

W. M. Hobson, Trustee's No. 1 P. T. Taylor, dry and abandoned, total depth 3,520 feet.

Panola County

H. S. Jackson and others' No. 1 M. I. Durnham, dry and abandoned, total depth 3,190 feet.

Smith County

Guy V. Lewis' No. 1 S. S. Cooke, oil sand 3,676-98 feet, initial production 417 bbls. in 17 hours, choked and pinched through casing, total depth 3,698 feet.

Rusk County

H. L. Blackstock's No. 1 W. P. Brightwell, top sand 3,674-84 feet, initial production 143 bbls. first hour on 1-inch choke, total depth 3,684 feet. H. L. Blackstock's No. 2 W. P. Brightwell, top sand 3,600 feet, initial production 267 bbls. first hour on 4-inch choke open two rounds, total depth 3,720 feet. Cox and Hamon's No. 1 D. M. Peterson, top sand 3,638 feet, initial production 2,700 bbls. first 12 hours on three-quarter inch tubing choke and 3-inch casing choke. Clark and Cowden's No. 1 Mercer, dry and abandoned, total depth 3,595 feet. Anderade's No. 3 Thrash, abandoned location. Ball and Malone's No. 2 Bradford, oil sand 3,655-85 feet, initial production 1,246 bbls. first 18 hours through tubing, total depth 3,685 feet.

Consolidated Oil Co.'s No. 5 Jobe, oil sand 3,554-3,600 feet, initial production 150 bbls. first 24 hours, total depth 3,640 feet. Same company's No. 2 Jobe, shale and sand 3,600-54 feet, initial production 1,300 bbls., total depth 3,697 feet. Same company's No. 1-A Camp, oil sand and shale 3,599 to 3,624 feet, initial production 1,560 bbls. first 15 hours, total depth 3,690 feet. George Demonstrand's No. 1 J. A. Bridwell, oil sand 3,598-3,620 feet, initial production 150 bbls. per hour

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Big Lake's Largest Well Being Killed

Result of General Conditions and Desire to Assist Commission on Proration. Tom Green County Deep Test Proves Failure

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 6.—While the Railroad Commission levied a new proration order this week which cut production in the Permian Basin, principally in the Yates Pool, Pecos County, the daily average production showed an increase of 7,623 bbls. per day, Howard-Glasscock, Pecos and Reagan Counties contributing to this increase, the latter county showing the greatest amount due to Group No. 1 Oil Corp. and Continental Oil Co.'s No. 2-B University steadily increasing in production while the owners were rushing material and preparing to kill its production. The Continental company sent the following message to the Railroad Commission of the State of Texas on April 3:

"You will recall that under instructions from the commission we killed well No. 2-B in the Reagan County Field to recondition it, early in December last year. At that time it was producing about 2,000 bbls. of oil per day. Later, in undertaking to clean it out, drill stem hung at 7,000 feet, and we began drilling around it in order to make new hole from that depth to producing horizon. We have just brought it in again at an increased depth of about 100 feet, and it is producing 163,000,000 feet of gas and 11,040 bbls. of oil per day with 750 pounds pressure at the casinghead and two 4-inch flow lines open. In view of general conditions, and in our desire to assist the commission in every way toward proration, we are starting this morning to kill the well and close it in entirely."

E. J. Nicklos, vice president in charge of production for the company at Ponca City, is overseeing the killing of the well. The well is the largest in the pool. Total depth is 8,667 feet.

Continental Oil Co.'s No. 1 Slaughter in League 134, Armstrong County School Land Survey, Cochran County, is another test which marks failure to produce in this area which has received other tests which had oil showings, but which were plugged and abandoned. This last test encountered sulphur water at 4,945-50 feet, an oil show with more water at 4,985 feet and was abandoned at a total depth of 5,000 feet.

Failure in Tom Green

Tom Green County's deep test drilled by the Phillips Petroleum Co. on the Gulden ranch in the J. Webb Survey is another interesting test in the West Texas district which proved a failure. It was plugged at a total depth of 5,376 feet. The drilling of this well was prompted by the oil showings encountered in a couple of tests in Schleicher County, the adjoining county to the south. Those tests also failed to produce oil in commercial quantities.

Southern Crude Oil Purchasing Co.'s No. 2 Cowden in Section 34, Block 43, Township 1n, Ector County should top the lime pay this week as it is now drilling below 4,020 feet. It topped the white lime at 3,993 feet which is 43 feet higher than No. 1 Cowden, 1 mile to the north, the discovery well of this pool in northeastern Ector County, and No. 2 had a showing of gas at 4,015 feet. Pay should be topped around 4,095 feet.

The Yates Pool, Pecos County, was reduced to 70,000 bbls. per day allowable from 89,500 bbls. in the Railroad Commission's new order. The Big Lake Field's allowable remains at 20,000 bbls. The entire West Texas district is given a daily allowable of 213,431 bbls. which is 22,000 bbls. under this week's daily average.

Nominations in the Howard-Glasscock County Pools show an increase for the month of April, new nominations being reported as 30,825 bbls. by the seven pipe line companies serving the fields, and the 533 producing wells. The daily average for these fields for the week was 29,834 bbls.

PANHANDLE, WICHITA FALLS AND RANGER DISTRICTS

The Panhandle district, including Gray, Hutchinson, Moore, Potter, Carson and Wheeler Counties, was given a daily allowable of 37,000 bbls. in the Railroad Commission's late proration order issued April 4. The Wichita Falls or North Texas district, including Archer, Baylor, Clay, Cooke, Foard, Montague, Wichita and Wilbarger Counties, was given a daily allowable of 63,000 bbls., and the West Central Texas or Ranger district was given a daily allowable of 33,500 bbls. This last allotment becomes effective May 15, and until that time the allotment will be 24,440 bbls. unless the offers to purchase more oil on a ratable basis increase in the meantime to a greater amount.

Considerable distress oil is reported in Montague County, North Central Texas, due to the Humble Oil & Refining Co. releasing pipe line connections on about 22 properties in that county during the past week. This releasing of connections was thought to follow as a result of the company disposing of its properties in the Nocona Pool to the Halmon Pipe & Supply Co. of Duncan, Okla. The company owned five leases, which contained 34 producing wells, with a potential of 147 bbls., and pipe line allowable of 120 bbls. per day.

Crude Reduction

The Dale Oil & Refining Co. of Wichita Falls has lowered the price of crude in the North Texas district, including the counties of Young, Archer and Wilbarger Counties. It cut to 10 cents per barrel under the present postings, and other refining companies in the area will probably meet these prices. For crude run through pipe lines other than its own, it has established a flat price of 63 cents per barrel in Wichita County, Archer and Young Counties, and 59 cents in Wilbarger County.

The Danciger Oil & Refining Co., which has production in the Huggins Pool, may lay a line from this pool in Cooke County to Muenster where it will be sold to the Muenster Refining Co.

Deep Oil Development Co.'s No. 1 Wilson, the well which is producing from a newly discovered pay horizon at 2,215 feet in Archer County, will be given several shots this week at various depths to test these pay horizons and increase the production of the well which is said to be good for around 300 bbls. per day on regular production. Gravity of the oil from the 2,215-foot pay is 42.6 degrees. This well has caused more excitement and new interest in the county and district than any other discovery in several months, as it will mean the deepening of many other shallower wells in this pool in an endeavor to pick up this new pay and better production.

WEST TEXAS PRODUCTION

Week Ending April 4, 1931

County—	No. wells	Bbls.
Andrews	2	90
Crane	376	19,068
Crockett	51	1,646
Ector	77	6,220
Fisher	10	750
Garza	0	25
Howard-Glasscock	538	26,629
Irion	8	74
Jones	78	1,310
Loving	39	3,539
Mitchell	111	1,876
Pecos	540	96,761
Reagan	255	29,834
Runnels	5	120
Scurry	5	0
Upton	258	5,165
Taylor	3	146
Ward	56	3,522
Winkler	595	46,630
Total production this week		243,405
Total production last week		235,782
Increase		7,623

COMPLETIONS IN WEST TEXAS

Borden County

George Goodrum's No. 1 Conrad, dry and abandoned, total depth 791 feet.

Crane County

Continental Oil Co.'s No. 2-B W. H. Cowden, top pay 2,435 feet, initial production 300 bbls., total depth 2,490 feet.

Irion County

Denny Andrews and Fox's No. 1 Tankersley, top pay 1,365 feet, initial production 35 bbls. of oil and 3 bbls. of salt water, total depth 1,372 feet.

Pecos County

McCarty Oil Co.'s No. 3 Gray, top pay 1,330 feet, shot with 30 quarts from 1,-

(Continued on Page 93)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended April 5

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor., Sec. 24, School Blk. A-46	Cleaning out; total depth 4,648 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,464 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Total depth 2,800 ft.; shut down.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.

COKE COUNTY

Reed, Hitchens et al's No. 1 Duncan, 1,980 ft. from S and 1,680 ft. from E of Sec. 239, Blk. 2, H.&T.C. Sur. (4,500-ft. cable test)	Shut down 30 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 162, T.&N.O. Sur.	Shut down 267 ft.
Betts & Dennis' No. 1 H. E. Woods, 710 ft. from E and 150 ft. from S Sec. 3, H.E.&W.T. Sur.	Shut down 80 ft.
Turner et al's No. 1 Bornig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Shut down 1,850 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 6, Blk. B-27, Public School Land	Drlg. 5,272 ft.
H. H. Sides and others' No. 1 B. P. Nolen, 150 ft. from S and 150 ft. from W of N 160 acres, Sec. 8, Blk. 31, H.&T.C. Sur.	Drlg. 130 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.

CULBERSON COUNTY

Cranfill Bros. and Sholts' No. 1 Seay, 2,310 ft. from S and W Sec. 45, Blk. 60, Public School Land	Running casing; total depth 1,940 ft.
Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.

(Continued on Page 94)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending April 5

CARSON COUNTY

Company, well, farm name, section and block—	Remarks:
Deep Lake Oil Co.'s No. 1 Keys, NE cor. SW, Sec. 1, Blk. 4, I.&G.N. Sur.	Spud and S.D.
Interstate Prod. Co.'s No. 1 Coffee, C S½ NW, Sec. 15, Blk. 4, I.&G.N. Sur.	S.D. 1,530 ft.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur.	Fishing 3,220 ft; estimated 100 bbls. from pay 3,212-16 ft.
North American O. & G. Co.'s No. 1 Burnett, 1,341 ft. S, 662 ft. E. of S E½, Sec. 30, Blk. 4, I.&G.N. Sur.	Rig.
Red River Gas Co.'s No. 5-A Bivins, 1,320 ft. S, 660 ft. E, Sec. 45, Blk. B-20, G.&M. Sur.	Drlg. 2,249 ft.
The Texas Co.'s No. 1 Schaffer, C SW, Sec. 68, Blk. 4, I.&G.N. Sur.	S.D. 1,409 ft.
The Texas Co.'s No. 1 Bednarz, 317 ft. S, 172 ft. W, S 100 ac. of SW, Sec. 2, Blk. 4, I.&G.N. Sur.	Rigging up rotary.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COCHRAN COUNTY

Continental Oil Co.'s No. 1-B Slaughter, 4,950 ft. N and E. of Lge. 134, Armstrong County School lands	Coring 4,820 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	S.D. 680 ft.

COTTLE COUNTY

Darby Oil Co. and Merry Bros. & Perrin's No. 1 Richards, 330 ft. NE, Sec. 13, B.S.&F. Sur.	Drlg. 3,500 ft.

GRAY COUNTY

Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, I.&G.N. Sur.	Rig.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur.	Run 5-in. csg. 3,058 ft.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Spudded and S.D.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur.	S.D. 740 ft.
Danciger O. & R. Co.'s No. 1-A Barrett, NW cor. S½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	S.D. 480 ft.
Danciger O. & R. Co.'s No. 1-B Barrett, SW cor. N½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	Rig up (rotary).
Danciger O. & R. Co.'s No. 1 Barnett, 231 ft. S, 330 ft. W, E½ of N 56 ac., Sec. 136, Blk. 3, I.&G.N. Sur.	S.D. 2,097 ft; 5,000,000 ft. gas 2,-097 ft.

(Continued on Page 94)

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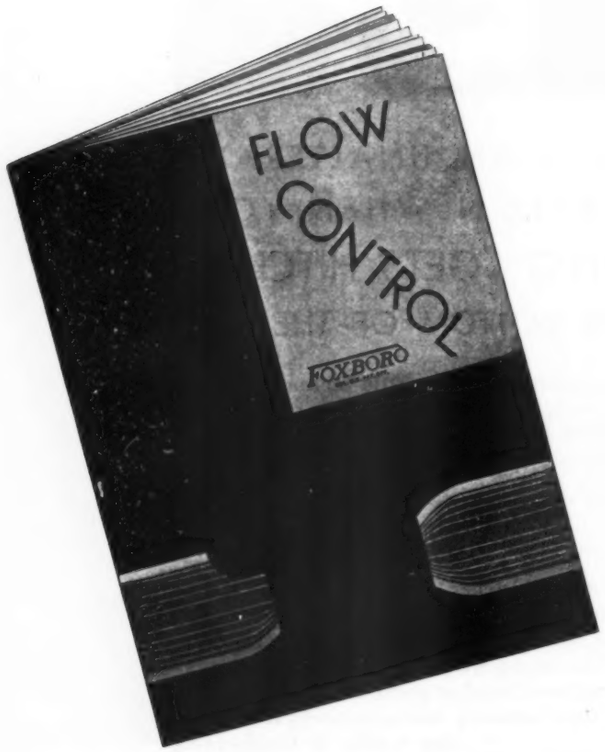

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Factors in Treating Natural Gasoline

Use of Various Chemicals Described. Concentrated Hypochlorite Offers Advantages Over Bleaching Powder

By Hoke Martin, Mathieson Alkali Works, Inc.*

The methods most generally employed in treating natural gasoline are the sodium plumbite or "doctor" method and the hypochlorite process, in which sodium or calcium hypochlorite is used.

Plumbite is generally used on very sour and high sulphur content natural gasolines. It is more difficult to use although not necessarily more expensive than hypochlorite, since it is possible to reclaim some of the spent solution. It sometimes gives a more stable product than hypochlorite unless the latter process is carefully controlled. On aviation gasoline, where it is necessary to meet the government specification of a neutral residue in the distillation flask, plumbite is used when the chlorine demand is greater than 1 pound per 300 gallons of gasoline. It is possible to meet this specification with hypochlorite but close control is necessary.

General Procedure

Most plumbite treating plants for natural gasoline are continuous. A solution of sodium plumbite, made by saturating a caustic soda solution of about 20 Be. concentration with litharge, is contacted with the gasoline, a previous wash with caustic soda having been given if any hydrogen sulphide is present in the distillate. Often times there is sufficient elementary sulphur content to cause a natural break. If not, part of the gasoline is by-passed through a tower filled with sulphur where it is picked up sufficiently for the break. The sodium plumbite reacts with the mercaptans to form lead mercaptides and elementary sulphur reacts with the latter to form precipitated lead sulphide and disulphides. The disulphides have a sweet odor and of course are negative to the "doctor" test. The gasoline passes on through settling tanks where the lead sulphide and plumbite solution settles out. The plumbite is recirculated until spent.

Plumbite Recovery

The spent solution consists mainly of lead sulphide and caustic solution. It is drawn into a tank and is there blown with air and steam with the result that a certain amount of the lead sulphide is converted into lead sulphate or lead thiosulphate, according to different authorities, and is redissolved in the caustic again forming sodium plumbite. After several hours' agitation some additional litharge and caustic may be added to bring up to the required strength. There are some very conflicting reports as to the success of reclaiming in this way and I am not in a position to state just what percentage of lead sulphide may be put again into solution.

The Fielschmidt-Cantrell process which separates the lead sulphide or blackstrap from the caustic solution and reclaims it by treating with chlorine, hypochlorous acid, or sodium or calcium hypochlorite has not met with a great deal of success. It was first thought that chlorine oxidized the lead sulphide almost completely to lead oxide or litharge and elementary sulphur but some recent work has shown that the greater percentage is converted into lead sulphate. This has reacted against it for the amount of caustic necessary to put $PbSO_4$ into solution is double the amount necessary for PbO.

Plants Use Hypochlorite

By far the greater quantity of natural gasoline treated is with the hypochlorite process or with sodium or calcium hypochlorite. We estimate that 80 per cent of the natural gasoline treated in the field is with hypochlorite. The calcium hypochlorite solution is now being made available by dissolving bleaching powder or by passing chlorine into a milk of lime soultion. Another source of calcium hypochlorite is a new product carrying the trade name H. T. H. (High Test Hypochlorite), which will be discussed a little later in this paper.

Sodium hypochlorite is made by passing liquid chlorine into a caustic soda solution. The requirements are about 1.2 pounds or over of caustic soda per 1 pound of chlorine. The final temperature of the solution should not go over 95° F. as a higher temperature will cause the sodium hypochlorite to break down into sodium chloride and sodium chlorate. There is a rise in temperature of 0.6° F. per gram per liter of chlorine absorbed. A solution containing 30 grams per liter of available chlorine (4 ounces per gallon) can usually be safely made without going over the maximum temperature of 95° F. This solution could be made up as follows: Take 250 gallons of 13° Be. caustic soda in the chlorinating tank and dilute with 350 gallons of cold water, dilution is put off until now simply as a means of getting a lower temperature of the solution before chlorinating. Then, 150 pounds of chlorine are now run into the solution. This stock solution is usually diluted to 3,000 gallons or more for use in treating.

Hypochlorite offers no particular difficulties on natural gasolines of low sulphur content and requiring less than 2 pounds of chlorine per 1,000 gallons treated. If the gasoline has no hydrogen sulphide content, satisfactory treating is often carried out by simply bubbling the gasoline through a tower filled with sodium or calcium hypochlorite. Baffling or filling the tower with tile or sulphur free coke improves the contact. If the demand is greater than 1 pound of chlorine per 1,000 gallons, better contact such as orifice, lever, or jet mixers are necessary. Better and more economical treating can be carried out by using a very dilute solution. To insure a uniform solution of low concentration, a treating plant that allows a very small quantity of fresh solution to be added continuously during recycling has found favor with a number of companies in the Mid-Continent Field.

Hydrogen sulphide is usually associated with those natural gasolines having a high mercaptan content. To successfully use the hypochlorite process, all hydrogen sulphide must be removed before contacting with hypochlorite. This is done by scrubbing with a caustic soda solution. If it is not all removed, hypochlorite oxidizes it to water and free sulphur, the latter remaining in the gasoline and resulting in a corrosive product. Once this happens, the only economical manner of removal is by blending with sour gasoline and plumbite treating.

On treating natural gasolines having a chlorine demand of more than 1 pound per 250 to 300 gallons, it is economical to give additional caustic washes after the hydrogen sulphide has been removed. It has long been known that mercaptans are similar to alcohols and phenols in their behavior to alkalis. The reaction is expressed by RSH + NaOH yields RSNa + HOH. The reaction is reversible and by repeated caustic washes the mercaptans can be removed to a low degree but never completely. This type plant usually employs a series of towers filled with caustic, the gasoline passing through them in succession, contact usually being secured by means of a jet mixer. If there is hydrogen sulphide, all of it will be removed in the first tower and the first tower will spend itself before the others. When this happens the caustic is dumped from the first tower and the solutions are backed up, the fresh solution going in the last tower.

Mr. Ritchie of the Signal Gasoline Co., at Rits Santa, Tex., has done some experimental work on the optimum concentration and temperatures best suited for mercaptan removal and has got some very interesting results. In some plants multiple caustic washing has cut the chlorine consumption as much as 50 per cent.

Although on low mercaptan content gasolines, there is little or no danger in the use of excess chlorine or of hypochlorite solutions of high concentration it is a very important consideration on those of high mercaptan content. Most of our difficulties with hypochlorite are the result of action on sulphur compounds or unsaturants subsequent to the oxidation of the mercaptans to disulphides and water. It is the so-called chlorhydrins which give us difficulty with odor and color stability following hypochlorite treating. Their formation can be minimized by the use of a very dilute solution of hypochlorite, not to exceed 5 grams per liter of available chlorine, and have at least 3 grams per liter of free caustic. Care should be exercised to use only enough of the hypochlorite solution to sweeten. The ideal way to use hypochlorite is to regulate the flow so as to spend the available chlorine content in one cycle. The use of 3 to 5 grams per liter of free alkali in a dilute solution of hypochlorite would result in an excessive caustic consumption unless the spent solution was used for diluting the stronger freshly prepared solution. This can be easily done as little or none of the free alkali in the hypochlorite is expended during treating.

Chlorhydrins, or in more common terms, excess chlorine, can be removed by following the hypochlorite with a strong caustic soda wash, according to some authorities. This, however, requires long and intimate contact and does not fit in with the instantaneous sweetening afforded by hypochlorite and so the best way to remove them is to prevent their formation in the beginning.

Multiple Caustic Washes

Generally speaking, the better way for treating a high mercaptan content natural gasoline is to employ multiple caustic soda washes for the removal of all hydrogen sulphide and part of the mercaptans, followed by a dilute hypochlorite solution and the use of only enough for sweetening. Then a caustic soda wash

*Read at the Natural Gasoline Plant Operators' meeting in Thurber, Tex., March 31.

Natural gasoline manufacturers attending operators meeting at Thurber, Tex., March 31, sponsored by the Natural Gasoline Association of America.

of strong concentration with long and intimate contact can do no harm. It is preferable to adequately wash with caustic and use as little hypochlorite as possible.

Treating as above results in the removal of very little sulphur aside from that contained in the hydrogen sulphide. A few of the lower disulphides, products of the oxidation of the mercaptans, are soluble in water and consequently are removed. Also the thiophene content of most gasolines is usually high and hypochlorite does not react with them in any manner.

In planning a hypochlorite treating plant, the question often arises as to the use of bleaching powder, chloride of lime, or chlorine and caustic soda as the source of the hypochlorite treating solution. It is preferable to use chlorine and caustic where the consumption will be as much as 25 pounds of chlorine daily or of a lesser amount when it is necessary to use caustic for the removal of hydrogen sulphide. The latter will make it necessary to handle caustic regardless, rendering the only advantage of bleaching powder over chlorine void. Chlorine is much easier to handle—there is no sludge problem which is most generally felt in disposition, clogging of lines, contactors, treaters, etc. Bleaching powder is a very unstable product while there is no deterioration of either caustic or chlorine during storage.

Use of New Product

It is at this point that I would like to speak of the new product H. T. H. (high test hypochlorite). To those users of bleaching powder, we might say that it has many advantages over it. The product is relatively new in the petroleum industry, as it has only been a short time since it has been available at a cost that would justify its consideration. Bleaching powder is made by saturating hydrated lime with chlorine gas. Its formula is usually given as $CaOCl_2$, calcium oxychloride. It is really a combination of calcium hypochlorite and calcium chloride which breaks down into such upon going into solution. There is also present about 13 per cent of free calcium hydroxide and 5 per cent of insoluble matter mainly calcium carbonate. The material is very hygroscopic and decomposes rapidly in the presence of moisture and heat. The available chlorine content of a high grade chlorinated lime is 35 to 37 per cent upon leaving the factory but among small users the yield of chlorine is often very much less. The new product has an available chlorine content of 65 per cent. It is made by a wet process by chlorinating a milk of lime solution and evaporation in vacuum dryers. It is a true solid calcium hypochlorite and is stable under any ordinary conditions of storage. It may be kept for a year or more without any decomposition. The calcium chloride has been converted into sodium chloride so that the material is not hygroscopic. It has only 4 per cent of insoluble matter compared with bleaching powder's 18 per cent and taking into consideration the available chlorine yield, the amount of sludge would be only 8 per cent of that of bleaching powder. In fact it is possible to use the solution diluted to the extent that practically all of the free calcium hydroxide, which we classify as insoluble matter if used in higher concentrations goes into solution. One plant in the Seminole Field that was using bleaching powder found it necessary to clean the sludge out every week—upon changing to H. T. H., no cleaning has been necessary since going to it last October. It goes into solution readily, which is not the case with bleaching powder. Often the pumping of undissolved particles of bleaching powder results in excessive corrosion to the pump and treaters. It is necessary to handle only 40 per cent or less of material and its use results in cleaner and more satisfactory treating. It is favored by the treating plant operators as all of the objectionable features of handling are eliminated. One may count on a yearly average of 2½ times the gallonage of gasoline treated per pound of H. T. H. compared with bleaching powder. Some plants which have not been equipped for maximum efficiency with bleaching powder will get even more.

GOOD GAS WELLS IN SOUTHERN AND WESTERN NEW YORK'S NEW FIELDS

By Special Correspondent

CORNING, N. Y., Apr. 4.—J. T. Cunningham's No. 1 Dencenberg, southeast of Wayne on the southwestern border of the Dundee, N. Y., field and in the Steuben County portion of the field, which found the Oriskany sand at 1,838 feet was drilled in 9 feet and made a 3,000,000-foot gasser at that depth. The well extends the field several thousand feet. The well was scheduled for deeper drilling and was expected to quit at a depth of about 1,865 feet. It will be capped and the rig moved to the location of No. 1 Houck, which is to be drilled in. No. 1 Houck was one of the early discoveries in the Wayne area and was not completed.

In the western New York field the Finance Oil Co. drilled in a 6,000,000-foot gasser between Smith's Mills and Perrysburg, definitely proving up a new gas pool. A 1,000,000-foot gasser had been drilled previously on the edge of the pool. The gas is sold to the Iroquois Gas Co. of Buffalo.

Another western New York gasser was brought in at Portville, Cattaraugus County, by M. J. Ball and James Boyle of Bradford, Pa. The gas comes from the Chipmunk sand. This is the fourth gasser drilled on the property.

The Belmont Quadrangle Drilling Co.'s No. 1 Deming in the Altay Field, Schuyler County, is a 4,000,000-foot gasser at a total depth of 1,950 feet. This is the twenty-second gas well in the north field. The Belmont Quadrangle Drilling Co.'s No. 1 Price in the Altay Field is below 1,500 feet and should be completed by the time this is published. The Crescent Production Co.'s No. 1 Turner in the Wayne, N. Y., area, is drilling below 300 feet.

On the Pennsylvania side of the Corning gas field the Allegany Gas Co. is pulling pipe to abandon its Kemp farm deep test in the Farmington Township, Tioga County. It had a showing of gas on Friday.

The Lycoming Gas Co.'s No. 1 Ackley south of Sabinsville, Tioga County, was given a 100-quart shot at 5,025 feet but it did not help any. The well had previously been shot with 40 quarts. It will be abandoned.

Drilling reports on wells in Tioga County included the following: Lycoming Gas Co.'s No. 1 Boom, Farmington Township, drilling below 1,775 feet; same company's No. 1 Hoyt, drilling below 900 feet; No. 1 Ashton, same township, drilling at 600 feet. The Penn Ohio Gas Co.'s No. 1 Price near Elkland is down 4,160 feet and not yet in the lime. This test is being closely watched. Three other Penn-Ohio tests are: No. 1 Place, 70 feet; No. 2 Close, 580 feet; and No. 1 Hager, 4,729 feet.

In the Farmington, Pa., field where the big well on the Ben Meaker farm caused a sensation by producing 100,000,000 feet of gas daily for about two weeks before it was shut in, the owners, Benedum & Trees are starting three wells near the Meaker well. No. 1 Harrington, No. 1 M. P. Close and No. 1 West, which were all spudded in this week. The same operators' No. 1 Decker is drilling at 600 feet and No. 2 Farr was running pipe at 900 feet.

The Segar Oil & Gas Co.'s No. 1 Bertch, near Westfield, Tioga County, is shut down at 4,910 feet with nothing showing although it is far below the depth at which gas was found on the Tioga County side of the field. It is expected the test will be carried down to 5,500 feet but nothing definite could be learned as to the plans of the owners.

Calkins and others' No. 1 Husted, near Woodhull, Steuben County, New York, is drilling below 1,200 feet.

EAST CENTRAL TEXAS

(Continued from Page 53)

through 2½-inch tubing and three-quarter inch casing choke, total depth 3,620 feet. Elzy Drilling Co.'s No. 1 W. M. Camp, oil sand and shale 3,525-78 feet, initial production 500 bbls., total depth 3,627 feet. Federated Oil Co.'s No. 1 Camp, oil sand 3,623-27 feet, initial production 2,240 bbls. first 18 hours through casing, total depth 3,675 feet. Foster and Deep Rock Oil Co.'s No. 3 Ashby, oil sand 3,645 feet, to 79 feet, initial production 838 bbls. first 12 hours through casing, total depth 3,679 feet. Foster and Wainwright-West Oils Ltd.'s No. 2 Camp, oil sand 3,595-3,628 feet, initial production 47 bbls. per hour through casing, total depth 3,628 feet. Foster and Klop's No. 2 Mayfield-Alford, oil sand 3,591-3,615 feet, initial production 290 bbls. first 5 hours, total depth 3,615 feet.

Haynes Drilling Co.'s No. 3 Brown, oil sand 3,675-90 feet, initial production 125 bbls. per hour, total depth 3,690 feet. Same company's No. 4 Brown, oil sand 3,694-3,712 feet, initial production 40 bbls. per day, total depth 3,714 feet. Hefflin and Fox and others' No. 2 Thrash, oil sand 3,675-95 feet, initial production 60 bbls. per hour, total depth 3,695 feet. Heep Oil Co.'s No. 1 J. E. Bean, top sand 3,635 feet, initial production 800 bbls. in 24 hours on a four sixty-fourths inch choke, total depth 3,670 feet. Humble Oil & Refining Co.'s No. 8 L. D. Crim, top sand 3,640-94 feet, initial production 103 bbls. first hour on eleven sixteenths-inch choke on tubing, total depth 3,694 feet. Same company's No. 2 S. S. Laird, top sand 3,630 feet, initial production 132 bbls. first hour on eleven sixteenths-inch choke, total depth 3,762 feet.

Humble Oil & Refining Co.'s No. 4 J. N. Peterson, top sand 3,655-3,760 feet, initial production 106 bbls. first hour on eleven-sixteenths-inch choke, on tubing, total depth 3,760 feet. E. M. Jones' No. 1 D. M. Peterson, top sand 3,670-3,771 feet, initial production 4,502 bbls. first 11 hours on three-quarters-inch choke and 1½-inch casing choke, total depth 3,771 feet. Karona Oil Co.'s No. 2 J. N. Peterson, top sand 3,624 feet, initial production 150 bbls. first hour on 2-inch tubing choke, total depth 3,677 feet. Magnolia Petroleum Co.'s No. 4 W. R. Crim, top sand 3,524 feet, initial production 700 bbls. first hour open through casing and tubing, total depth 3,660 feet. Same company's No. 5 W. R. Crim, top sand 3,637 feet, initial production 700 bbls. first hour open, total depth 3,657 feet. Same company's No. 1 Ben Laird, top sand 3,575 feet, initial production 549 bbls. on three-quarters-inch tubing choke, total depth 3,587 feet. Markham and Dunning's No. 1 J. N. Peterson, top sand 3,654 feet, initial production 640 bbls. first hour open, total depth 3,726 feet.

Navarro Oil Co.'s No. 1 R. N. Brightwell, top sand 3,666 feet, initial production 1,953 bbls. first 24 hours on 2½-inch choke, total depth 3,704 feet. John Olvey's No. 2 W. R. Crim, top sand 3,708 feet, initial production estimated 11,280 bbls. first 24 hours on 3½-inch tubing choke and 1-inch casing choke, total depth 3,572 feet. Jim Pollard's No. 1 Ladd, abandoned location. C. E. Upschurch's No. 1 W. P. Brightwell, top sand 3,620 feet, initial production 750 bbls. first 12 hours on one-quarter-inch choke, total depth 3,637 feet. Witherspoon and others' No. 1 Daisy Bradford, oil sand 3,643-54 feet, initial production 1,600 bbls. first 11 hours on choke, total depth 3,675 feet. West Texas Oil & Refining Co.'s No. 1 Tally, oil sand 3,565-76 feet, initial production 416 bbls. first six hours through casing, total depth 3,586 feet. Vaughn and others' No. 1 Young, oil sand 3,661-81 feet, initial production 2,000 bbls., total depth 3,721 feet.

Universal Oil Co.'s No. 1 J. T. Brown, oil sand 3,665-95 feet, initial production 80 bbls. per hour through tubing, total depth 3,695 feet. E. R. Tennant's No. 3 Bradford, oil sand 3,646-73 feet, initial production 900 bbls. first 24 hours through tubing, total depth 3,720 feet. E. R. Tennant's No. 1 H. Brooks, oil sand 3,670-79 feet, initial production 125 bbls. per hour through tubing first 18 hours, total depth 3,693 feet. E. R. Tennant's No. 2 Bradford, oil sand 3,620-42 feet, initial production 1,310 bbls. in 24 hours through casing, total depth 3,670 feet. Sinclair Oil & Gas Co.'s No. 9 Holland, oil sand 3,660-3,705 feet, initial production 1,291 bbls., total depth 3,710 feet. Same company's No. 7 Holland, oil sand 3,627-95 feet, initial production 417 bbls. first 24 hours, total depth 3,695 feet. Same company's No. 5 Holland, oil sand 3,623-3,700 feet, initial production 95 bbls. per hour through tubing, total depth 3,700 feet. Same company's No. 2 Daisy Bradford, oil sand 3,640-54 feet, initial production 565 bbls., total depth 3,707 feet. Pioneer Oil Co.'s No. 2 Thrash, oil sand 3,664-90 feet, initial production 1,244 bbls., total depth 3,702 feet. Same company's No. 1 Taliaferro, oil sand 3,694-3,721 feet, initial production 2,458 bbls. first 13 hours through tubing, total depth 3,732 feet. Petroleum Marketing Co.'s No. 1 Frederick, oil sand 3,564-79 feet, initial production 138 bbls. per hour, total depth 3,632 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Moore, oil sand 3,680-96 feet, initial production 1,000 bbls., total depth 3,699 feet. McMillan and others' No. 1 W. B. Thompson, oil sand 3,642-80 feet, initial production 604 bbls. first hour through tubing, and casing, total depth 3,707 feet. H. L. Hunt's No. 1 Camp, oil sand 3,568-86 feet, initial production 156 bbls. on pump, total depth 3,625 feet. H. L. Hunt's No. 2 Bradford, oil sand 3,536-56 feet, initial production 50 bbls. on pump, total depth 3,583 feet.

Upshur County

DeArmand and others' No. 1 M. Fluellan, dry and abandoned, total depth 3,864 feet. McGinley and others' No. 1 Minton, dry and abandoned, total depth 4,004 feet.

Van Zandt County

Pure Oil Co.'s No. 10 J. T. Thompson, initial production estimated at 100 bbls. on eleven-sixteenths-inch choke, total depth 2,933 feet. Same company's No. 6 A. R. Tunnell, initial production on eleven-sixteenths-inch choke, total depth 2,955 feet. Same company's No. 5 Ella York, initial production 120 bbls. on eleven-sixteenths-inch choke, total depth 2,920 feet.

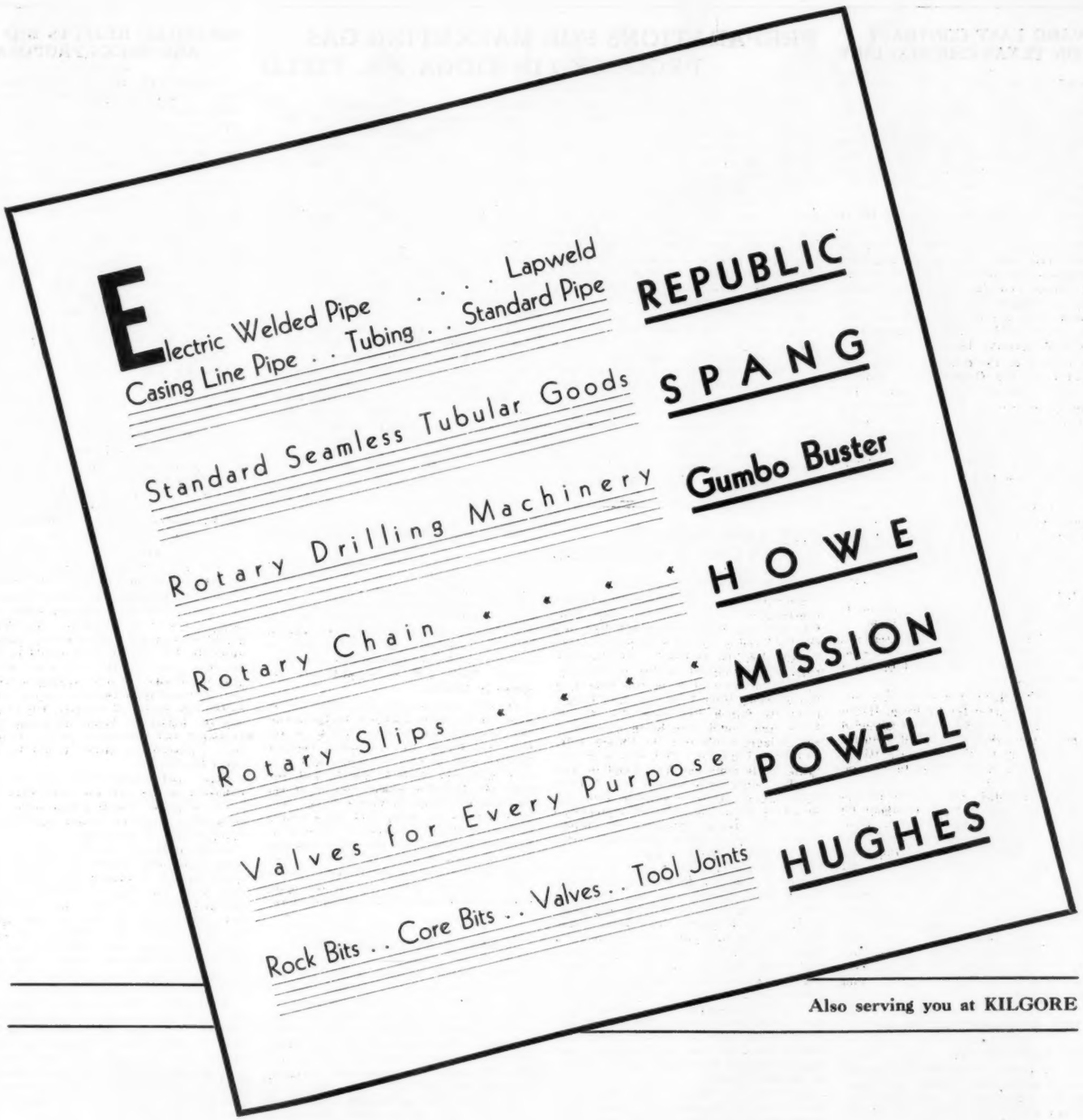
ROBERT FIELDS DIES

Robert Fields, codiscoverer of the Church and Fields Pool, Crane County, Texas, died March 29 at Miami, Fla. Mr. Fields had been in ill health for 2½ years and had made his home in Florida to recuperate. He was born in Norton Park, Pa., near Philadelphia on September 25, 1888, and attended the University of Pennsylvania. In 1916 he enlisted in the French Foreign Legion and saw service at the front with them. Upon the United States entry into the war he transferred to the American army and in 1919 was discharged with the rank of lieutenant. After his discharge from the army he entered the oil business and operated in Arkansas, Venezuela and Mexico until 1925 when he moved to West Texas and in March of 1926 was associated in drilling the discovery well in Crane County. He continued as an oil producer in West Texas until 1928 when ill health caused him to sell out his holdings and retire to Florida.

ITALIAN SHALE OIL

NEW YORK, Apr. 4.—Production of shale oil in Italy as a subsidy of the government has been arranged between the Italian government and a company designated as A.B.C.D., according to reports from Rome. The company owns large deposits of bituminous limestone near Ragusa and Vizzine in Sicily, these deposits being reported to contain as high as 12 per cent of oil.

Under the terms of the subsidy, the government will grant 140 lire per ton of oil of a specified grade, the company being required to erect a plant to produce a minimum of 50,000 tons of crude oil per annum, and to have this plant, constructed entirely at its own expense, in operation within three years.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Pipe Line Construction News

AWARD LAST CONTRACT ON TEXAS-CHICAGO LINE

Ford, Bacon & Davis, Inc., engineers, have been awarded the contract for construction of the last section of the world's longest natural gas pipe line which extends more than 950 miles from the Texas Panhandle to Chicago. The last or seventh link of this project, running from Rock Island to Joliet, Ill., will be 155 miles long and the contract provides for its completion on or before July 1.

The seventh section will be made of 24-inch pipe, the standard size employed throughout the line, and will cross the Fox River and the Illinois-Mississippi Drainage Canal. At Joliet the line will connect with the Chicago belt distribution system which serves greater Chicago and adjoining territory.

A feature of the contract, which was awarded by the Continental Construction Co., sponsors of the project, is the bonus or penalty provision incorporated in the contract. This provision states that Ford, Bacon & Davis, Inc., will receive a bonus for each day deducted from the 90 days allotted for construction of the last link and also a penalty for each day over the allotted time. Because of the time allotment, a large amount of equipment will be used on the job. A total of about 100 tractors, trucks and ditching machines will be used to transport material and place in position the 45,000 to 50,000 tons of steel pipe and fittings required.

In the path of the line are hundreds of farm drains which will have to be removed and replaced. Two river crossings are included in the last link and hundreds of men will be employed to finish the section on time.

The Rock Island section is the second to be contracted for by Ford, Bacon & Davis, Inc. The other section extended 140 miles through a portion of Kansas, running almost to the Missouri River, making a total of 295 miles to be constructed by these engineers.

When completed the Texas-Chicago line will serve natural gas to about 50 cities and towns along its route. Estimated reserves of the line are 7,000,000,000,000 feet. These reserves are the property of the nine large utility and oil companies which formulated the plans of the project and organized the Continental Construction Co. These companies are Cities Service Co., Standard Oil Co. of New Jersey, Insull & Son, Inc., The Texas Corporation, Columbian Carbon, Skelly Oil Co., Phillips Petroleum Co., Southwestern Development Co., and United Carbon.

DEL RIO LINE EXTENSION

SAN ANTONIO, Tex., Apr. 6.—A number of towns along the Rio Grande section of southwestern Texas will benefit by the completion of the Texas Gas Utilities Co.'s natural gas line to Del Rio and Eagle Pass. It is said that plans call for the ultimate extension of the system to supply all the smaller cities in the southwestern area with natural gas service. Gas for these towns comes from the shallow wells of north central Zavala County.

ARTESIA LINE

ARTESIA, N. Mex., Apr. 4.—Resumption of operations as a carrier of crude in Artesia Pool was started April 1 by the New Mexico Pipe Line Co. The line was leased more than a year ago by the Illinois Pipe Line Co. The Ohio Oil Co., of which the Illinois is a subsidiary, withdrew as a purchaser of Artesia crude last fall.

PREPARATIONS FOR MARKETING GAS PRODUCED IN TIOGA, PA., FIELD

CORNING, N. Y., Apr. 4.—An announcement at Wellsboro, Pa., that preliminary work had been started for the laying of a 100-mile pipe line to carry natural gas from the Tioga Field in Pennsylvania northeast into New York State passing through Corning and Ithaca is the most important yet made in connection with the marketing end of the gas development in this region. John B. Tonkin, vice president and general manager of the Peoples Natural Gas Co., has started three crews of 10 men each, to make surveys and right of way has been secured for the entire line.

Although there has been considerable work done in the Tioga Field in securing rights of way by various companies this is the first announcement of any plan that will bring the natural gas into New York State through a new pipe line.

Efforts toward getting rights of way from the gas field to large industrial centers have been underway for some time. It was announced about three weeks ago that the Penn Ohio Gas Co. had secured leases for a pipe line leading from the Close well south toward Williamsport. The Public Service Commission at Harrisburg announced that both the Pennsylvania Natural Gas Co. and the Allegany Gas Co. had been granted permission to extend distribution areas. The Allegany company supplies the Crystal City Co. with natural gas.

A report was received from the Tioga Field that the Pennsylvania Natural Gas Co. has secured some rights of way for a 16-inch pipe line which will extend south from the village of Tioga and running west of that village. These leases provide that additional lines may be laid in the same right of way without added costs to the lessors.

It is reported that leases have been secured leading north from Williamsport and that the company is about ready to begin laying pipe on that end.

Natural gas from the Altay Field west of Watkins, N. Y., is being transported to eastern points by line of the Home Gas Co. passing near this city and only recently this company secured new right of way through the town of Horseheads where the new pipe line connects with the old New York Transit line.

PIPE LINE PROJECTS IN EAST TEXAS FIELDS

FORT WORTH, Tex., Apr. 6.—Another outlet for the Kilgore Pool is being constructed by the Sinclair Pipe Line Co., which is building a 6-inch line into the field and a loading rack near Kilgore on the I.&G.N. railroad, and the company will gather oil to ship to Houston. It is also reported from the field that the Humble Pipe Line Co. would complete its 8-inch line into the Kilgore Field, and would soon be in position to run Kilgore crude into its 10-inch main line near Longview, that line now carrying crude from the Van Field in Van Zandt County to a station near Shreveport, where it is connected into the Standard Pipe Line Co. of Louisiana's main line from Oklahoma to Baton Rouge. Kilgore crude will follow this same route to Baton Rouge.

The Magnolia Pipe Line Co. is constructing a 6-inch line from the Joiner Field, Rusk County, for the Tidal Oil Co., the line to connect with the Magnolia's 10-inch which is now being tested with oil. The line will carry Lathrop and Kilgore crude, two laterals serving these two fields and carrying it to the main station which is being constructed in the John Groce Survey in Gregg County. The southern terminus is at Center Station in Shelby County. The 6-inch line will connect into the 10-inch about half way between the two main stations, and the oil carried to Center station thence to the Gulf Coast.

It is reported that the Atlas Pipe Line Co. will lay a line from the Joiner Field to the 48-car loading rack and tank farm site approximately 3 miles south of Longview, which will be the western terminus of the company's 8-inch line from Shreveport, this lateral to the Joiner Pool to be constructed for the express purpose of purchasing oil in that pool and running to the Spartan Refining Co.'s refinery at that place. The two companies are owned and controlled by the same individuals. The main line from Shreveport to the Gregg County tank farm site and loading rack is now under construction.

SAN ANGELO GAS LINE

SAN ANGELO, Tex., Apr. 4.—Barring unavoidable obstacles, San Angelo will be using gas from the deep wells at Texon by May 1.

PROGRESS OF KETTLEMAN LINE

LOS ANGELES, Calif., Apr. 4.—With the work of laying the gas lines from the San Joaquin River northward to Merced completed, and possibly about 5 miles of ditch to be dug and about 7 miles to be laid south of the river, it will be a matter of possibly two or three weeks before natural gas from Kettleman Hills will be turned into the mains in Madera.

It still remains for the pipes to be hung on the state highway bridge across the San Joaquin River. South of the river the 8-inch line extending through Madera and Merced Counties will connect with the 12-inch which will run from the Herndon power station of the San Joaquin Light & Power Corp. The 12-inch lines are being laid down Grand Avenue in Fresno County to connect at Belmont Avenue with the mains running from Kettleman Hills to Fresno. The work of constructing the Herndon power plant is already under way on the south bank of the Fresno River and east of the old highway.

NEW JERSEY GAS LINES

Public Service Electric & Gas Co., operating subsidiary of Public Service Corp. of New Jersey, will lay approximately 200 miles of gas lines this year in New Jersey territory served by the company. Practically all of these lines will be constructed to provide service for new customers in communities already supplied with gas.

When the work is completed, the company will have in use more than 6,200 miles of line. There were but 1,495 miles of mains in service December 31, 1903.

BOONVILLE VOTES FRANCHISE

BOONVILLE, Mo., Apr. 6.—The Missouri Power & Light Co. obtained a 14-year franchise to market natural gas here at a special election. The vote for the franchise was 1,226; against, 727. A 20-year franchise was defeated last October by 33 votes. The light company promised to have natural gas ready for distribution within 30 days. A lateral pipe has to be constructed, but the fuel is now ready to be piped into the Panhandle eastern line which has been laid to the city limits from Amarillo, Tex.

AMARILLO REJECTS BID AND SEEKS PROPOSALS

AMARILLO, Tex., Apr. 6.—Because other contractors asked more time to study plans and because the one full proposal received was "admittedly high," the city commission decided to readvertise for bids on the contract to install a complete gas distribution system in Amarillo.

New bids for the contract, considered a $1,000,000 job, will be received not later than 7:30 o'clock on Tuesday night, April 14.

Mayor Ernest O. Thompson presided at the special session. Upon the motion of Commissioner H. Ernest Smith the commission decided to reject bids received last Tuesday night and to authorize the city manager to readvertise. Commissioner J. N. Vernon suggested April 14 as the date for receiving bids.

"There was only one bid and it was admittedly high," said Mayor Thompson.

A complete bid was submitted by the American Cast Iron Pipe Co. of Dallas.

The bid of the Frick-Reid Supply Corp. of Tulsa was on material only.

When the two bids were received the city commission was informed by the Vulcan Oil & Gas Co. of Amarillo and by Knupp & Fredell, general contractors, that they desired to submit bids, but had not had sufficient time to study the plans and specifications.

Plan of financing the gas distribution system will remain unchanged and will be outlined in the new notice for bids.

The city proposes to pay for materials and installation with revenue bonds covering a period of 10 years. The bonds would bear 6 per cent interest, payable annually, but only interest would be paid the first year. At the end of the second year the bonds would be redeemed serially. Revenue from the gas system would be the sole pledge of security, but to protect the holders of bonds on payment of principal and interest a proper deed of trust covering the utility would be executed by the city.

Plans and specifications on the distribution system call for more than 246 miles of mains which would make fuel from the city's own supply available to every section of Amarillo.

Early in March the city signed a contract with the Huber Petroleum Co., which agreed to furnish gas at the city gate, near The Texas Company's refinery, at the rate of 5 cents for each 1,000 feet. At the time the contract was signed the city announced a schedule of rates with 22½ cents per 1,000 feet as the maximum for domestic users. The lowest rate on the city's schedule is 7 cents for largest consumers.

Work was started at once on laying a line from the city gate to the business district. Gas from the Huber company's field in Hutchinson County has been turned into the city's line and will be available to the city's first customers this week if favorable weather prevails, it was estimated by the city's engineering department.

NEW TEXAS GAS LINE COMPLETE

Another link in Texas Gas Utilities Co.'s network of natural gas pipe lines serving cities and towns in Southwest Texas has been completed and is now in operation, according to announcement of Ross Holmes, chief engineer of Appalachian Gas Corp., the parent company. The new line, which traverses part of the Winter Garden district of Texas, taps the company's main pipe line about 25 miles south of Uvalde, terminating in La Pryor, where a distribution system has been constructed to supply industrial, commercial and domestic consumers. Gas for the line is supplied from the company's Uvalde Field wells.

adjusted to agree with the gang tank strapping, have proven entirely satisfactory."

DOES IT PAY TO COAT PIPE?

Does a question exist as to whether it really pays in the end to apply expensive coatings to pipe to prevent corrosion? At least one large oil company does not paint its field storage tanks, arguing that rust and corrosion cost less in the long run than paint. Is there not ground for taking a similar position with reference to the coating of pipes?—O. S. T.

The question you raise has received careful consideration on the part of pipe line owners and searching tests and experiments have been conducted to answer this very question. All evidence which has come under the notice of this department indicates that the practice of using good pipe-coating materials is economically sound and that the increased life of properly protected lines is ample justification for the investment in coatings. This view is confirmed by the Federal Oil Conservation Board in its report to President Hoover, which says:

"Corrosion is an important factor in determining the cost of a pipe line. The amount of expenditure warranted for protective pipe coatings depends upon the nature of the soil in which the pipe is to be laid and the relative corrosive effects of the soil. The economic value of good pipe coatings has become more and more appreciated during the past few years. Many operators are using costly pipe coatings, and experience has proved that such protections are economically justified. Frequently, the life of a pipe line in the ground may be prolonged 50 per cent by the application of proper pipe coatings."

A similar opinion is expressed by Stanley Gill of the research department of the Gulf Oil Corp., who has given this subject careful study and whose writings are widely read.

"Much progress has been made, and is being made," Mr. Gill states, "in the development of coatings for the protection of buried pipe lines. Many really effective coating systems are available, and numerous improvements and developments are to be expected. It is significant that more and more use is being made of more or less expensive coating systems; that the present tendency is to use coatings of proven effectiveness rather than to cost lines with materials whose most important qualifications are that they are 'black and cheap.'"

These comments represent the opinion held by experienced pipe line operators and engineers. This is particularly true, in many cases, if long experience and intimate study and association with the problem have been possible. Engineers or operators who have not enjoyed the advantages of long-time actual contact with pipe line corrosion and its prevention in their daily work frequently overlook its importance when suddenly confronted with the building of a new big line. A bare or inadequately protected line usually results, with the possibility of expensive reconditioning to be done in later years.

From The Oil and Gas Journal, Feb. 26, 1931

"Does it Pay to Coat Pipes?" is an important question recently asked of *The Oil and Gas Journal* in the page conducted under the heading, "Field Problems and Their Solution."

The answer given is such a clear statement of the best opinion on the subject that we reproduce it herewith as a matter of general interest to the oil and gas industry.

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Few Completions in Central West Area

Eleven New Locations Made in Central Ohio Field and Six Wells Spudded. New Work Starting in Stark County. Missouri Dry Hole

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 6.—In the old Lima Field of northwestern Ohio no new completions were reported, although a number of old wells have been abandoned. In Liberty Township, Wood County, the Ohio Oil Co. abandoned Nos. 3, 7, 9 and 16 S. H. Powell farm, Section 2, and Nos. 10, 20 and 25 in another S. H. Powell farm, in Section 11. Same company abandoned in the same township No. 8 H. C. Killian, Section 11; Nos. 6, 18, 21, 26 and 31 John Johnson, same section; No. 5 Lovina Munn, same section; No. 9 Thomas Carr, same section; No. 5 Mercer & Collins, and No. 7 Thomas Knight, both in Section 12. In Henry Township, the Ohio company abandoned Nos. 12 and 27 Franks, White and Hamman farm, Section 21, and Nos. 3 and 25 Vincent H. Coons farm, Section 22. In Portage Township, same county, the Ohio Oil Co. pulled out Nos. 1 and 3 Sarah Wonder farm, Section 8.

In Plain Township, Wood County, Hartman & George abandoned Nos. 1, 4 and 5 Lehman Brothers farm, Section 35, and Murray B. Chidester pulled out old No. 1 B. P. Stratton farm, Section 35, same township.

In Liberty Township, Hancock County, the Ohio Oil Co. abandoned Nos. 6 and 16 R. W. Boyd farm, Section 9, and Nos. 2, 3 and 12 Thomas Gundy farm, Section 8.

Two new wells have started drilling in Biglick Township, Hancock County, Ridge Gas & Oil Syndicate's No. 5 Elnor Cross farm, Section 35, and R. W. Kirk and others' No. 3 E. H. James farm, Section 34.

CENTRAL OHIO

Only 9 completions were reported in the Central Ohio Field, of which 3 were producers with an initial of 50 bbls., 3 gas wells and 3 dry holes. For the same period 11 new locations were made and 6 started spudding, a total in new work of 17.

In Ashland County, Lake Township, Robinson and others drilled a very light gas well on the Lewis Sprang farm, Section 18, from 654-63 feet. The well showed approximately 11,000 feet and the lease owner sold the well to the farmer who will utilize it in his residence. Harman and George has a showing of both oil and gas in No. 4 on the David Horn farm, Section 4, same township, from 568-603 feet. The well will be given a shot in hopes of making a commercial well of it.

In Medina County, the Preston Oil Co.'s No. 3-1,485, on the Ira Cleveland farm, Lot 20, showed an initial of 15 bbls. from 430-56 feet. Edson and others' No. 12 Archie E. Packard farm, Lot 6, same township, is reported good for 5 bbls. from 305-43 feet.

In Coshocton County, Perry Township, the Preston Oil Co.'s No. 1-1,461 W. B. Clark farm, Section 16, was reported dry at 3,130 feet. Same company made locations for No. 1 John W. Underwood and No. 1 W. B. Howell farm, both in Section 25, same township.

In Summitt County, East Ohio Gas Co. set a stake for a second test on the S. and K. Dewalt farm, Section 25, Franklin Township.

In Licking County, G. H. Long has a light gas well from 661-66 feet in No. 3 on the Granville Ashcraft farm, Section 22, Fallsburg Township. Wehrle Gas Co. found a dry hole from 2,104-22 feet in No. 4 L. S. Robinson farm, Section 7, Bennington Township.

Muskingum County

In Muskingum County no new completions were reported. Whitehill Oil Co. made locations for Nos. 5 and 6 on the James Boyer farm, Section 6, Hopewell Township. Hopewell Gas & Fuel Co. made a location for No. 1 on the Laura Van Allen farm, Section 7, same township. The Atha Oil Co. is drilling on the Burton Townsend Co.'s property in the third-quarter of Wayne Township, same county.

In Athens County, Carthage Township, the Shady River Oil & Gas Co. has an average gas well in No. 13 on the F. W. Chapman farm, Section 12, at 1,210 feet. Bode and others are drilling a second test on the P. R. Devore farm, Section 23, Waterloo Township.

In Stark County one of the active areas of the Central Ohio Field at this time, some new work is starting. Stoltz Oil & Gas Co. is drilling No. 1 James Halter farm, Section 35, Jackson Township. Wiser Oil Co. is drilling on the G. W. Slagle allotment, Section 14. Bettler and others are drilling No. 1 on the Rudy School House lot, Section 6. Brendall and others made a location on the Louis J. Wernel farm, Section 25, and the East Ohio Gas Co. made a location on the John Stroble farm, Section 23, all being in Jackson Township. In Lawrence Township, Wittmer Properties, trustee, is drilling on the E. K. Bruegger farm, in Tract 15.

In Guernsey County, Wheeling Township, the Preston Oil Co.'s No. 4-1,448 Loren C. Stocker farm, Section 8-12, showing for 20 bbls. initially at a total depth of 3,953 feet. No. 5-1,474, same farm, is spudding.

In Belmont County, Somerset Township, W. C. McBride, Inc., drilled a dry hole in a second test on the Carrie J. Smith farm, Section 7, in the Keener sand at 1,389 feet.

INDIANA

Only one completion was reported from Indiana, the Morris Oil Co.'s No. 1 White farm, in Anderson Township, Warrick County about 2 miles east of the town of Chandler, which was dry.

The Berninda Oil & Gas Co. abandoned No. 8 on the D. Studebaker farm, Section 8, Jefferson Township, Adams County, and the Ohio Oil Co. (Indiana division) abandoned No. 5 D. Dudgeon farm, Section 5, Blue Creek Township, same county. There are still many locations to drill in the old Trenton Rock area, but the wells would be small and at present crude prices, it would be out of the question. Southern Indiana should get a better play for both oil and gas than it has been given, being across the Ohio River from the rich Owensboro Field of Kentucky. Two outstanding counties in the area are Spencer and Perry. In the extreme southwestern part of the State two wells are drilling in Vanderburg County, where the Vanderburg Oil Corp. is drilling No. 3 George Horby farm, SE, Section 32, Center Township, and Mack Lifgty and others are drilling No. 1 on the Charles Slag farm, SE SW, Section 32.

ILLINOIS

No new completions were reported from any area of Illinois, and the only reports were the pulling out and abandoning of Landwehr & Sacks' Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 9 on the East St. Louis Railroad right of way, in the NW, Section 28, Sugar Loaf Township, St. Clair County, southeast of East St. Louis. There are now but three wells under way in the pool that was so active for the past few years, and known as the Dupo Pool. They are John Lutton's No. 2 on his fee property, Section 17, Sugar Loaf Township; Hans Wolf's No. 3 Oliver Anderline, Section 33; and Ritter and others' No. 1 William Scheiffler, in the Millstadt section, Survey 5.

MISSOURI

The Meramac Oil Co. drilled a dry hole on the City of Valley Park, in St. Louis County, Missouri, at a depth of 1,153 feet.

NEW MUNFORDVILLE DISTRICT WELL REPORTED 60 BBLS. AN HOUR INITIAL

By George A. Whitney
Staff Correspondent Kentucky Fields

HORSE CAVE, Ky., Apr. 6.—What effect the heavy cut in the price of crude in the Legrande Field of Hart and adjoining counties will have remains to be seen. While the territory is shallow and some very large wells have been found, a great many failures have been recorded since the initial well was found on the McKinney farm. When the first oil was disposed of it brought $1.15 a barrel, then later oil was delivered to Louisville refineries at $1 a barrel, and the present price has gone down to 30 cents a barrel, and naturally would have a tendency to stop active development.

Another gusher has been developed in the Munfordville area of Hart County, where Laramore, Snyder and others' No. 1 Grubb farm, just west of the discovery well of the Eli Bradley farm, in Logsdon Valley, which was reported with an initial of 60 bbls. an hour, putting it in the class with the Bradley farm well.

Numerous wells comprising oil producers, gas and dry holes are reported in the Hart County area. In the Legrande Pool, H. F. Norris and others' No. 4 E. T. Smith farm produced an initial of 150 bbls. Norris & Davis' No. 4 R. H. Hatcher farm is reported at 200 bbls., and in No. 1 Pedigo-Thomas farm Norris Brothers found a fair gas well, along with a 10-bbl. pumper in No. 1 William Cook farm. B. F. Wilson and others' No. 2 Lee Wilson farm produced initially 300 bbls. H. Z. Clark's No. 1 on the J. Gillock 100 acres was a 200-bbl. well, and same party drilled a dry hole on the Mayfield farm, a mile southwest of Rowley. Bales and others' No. 1 on the Blue Springs lot was a surprise, coming in at 100 bbls. initially. B. F. Wilson's Nos. 1, 2 and 3 B. Lockett farm produced 50 bbls. each the first 24 hours.

Hart County Wells

In Hart County L. C. Young drilled a 150-bbl. initial producer in No. 1 James Richardson farm, in the Legrande Field, also a 50-bbl. producer on the William Ward farm. Same party drilled No. 3 William McKinney farm for an initial of 150 bbls. and No. 1 McGhee Legrande farm for 200 bbls. in 24 hours. C. H. Clark's No. 1 M. Peyton farm showed 200 bbls. Pearson Oil Syndicate's No. 1 J. A. Edwards farm at Three Springs is reported at 50 bbls. C. E. Daugherty's No. 1 Parrish Richardson farm, 3½ miles east of Munfordville, is also a 50-bbl. producer. John Wright has a 50-bbl. initial well in No. 1 A. S. Edwards farm. Unknown parties drilled a 10-bbl. pumper in No. 2 on the Mrs. P. L. McKinney farm.

New gas wells reported in Hart County are scarce at this time. The Pearson Oil Syndicate has a small gas well in No. 1 Bales farm, near the town of Pascal. John H. McClurkin drilled in a fair gas well on the McCubbin farm, 2 miles east of Dowagiac at Furnace.

Dry holes were more numerous in Hart County. Richards & Gebbie have two dusters, one at the Newberry farm and the other on the Asberry Richards farm. Norris Brothers have a dry hole in No. 1 Maxie farm. John H. McClurkin also drilled a duster in No. 1 W. L. Chaney farm in the Legrande Pool. McClurkin, Hughes and others' No. 1 Blaine Vance farm in the Power Mill area was dry. Mecca Oil Co. drilled a dry hole on the W. W. Stales farm, a mile east of the big oil well on the Bradley farm in Logsdon Valley. Tichenour & Mann found a dry hole in No. 1 R. T. Reynolds farm, south of Bonneville. Fred Estes, Lima operator, drilled a dry hole on the Harry Simpson farm. George Morrison's No. 1 E. Nunn farm was dry. John Wright's No. 1 J. H. Taylor farm was dry. Rex-Pyramid Oil Co.'s No. 1 Fultz farm was a duster. Dry holes drilled by unknown parties: No. 1 Mrs. G. L. McKinney farm, Legrande Pool; No. 1 Clarence Sandidge farm near Pascal; No. 1 Dilly Arthur; No. 1 W. L. Hatchett, and No. 1 D. A. Chapman farm.

Scattered Completions

In Green County which adjoins Hart County to the northeast, Park & Pearson drilled a dry hole on the John Madden farm, near Pickett Knob, and Combs and others' test on the Givin Brothers farm is reported dry.

In Owensboro Field, Daviess County, Ira C. Huff's No. 1 Robergs farm, reported dry at a depth of 1,560 feet.

In Henderson County, Niagara Field, Christian & Schmitt's No. 2 Edward Walker farm showed 10 bbls. under pump and No. 2 was a dry hole and No. 3 drilling.

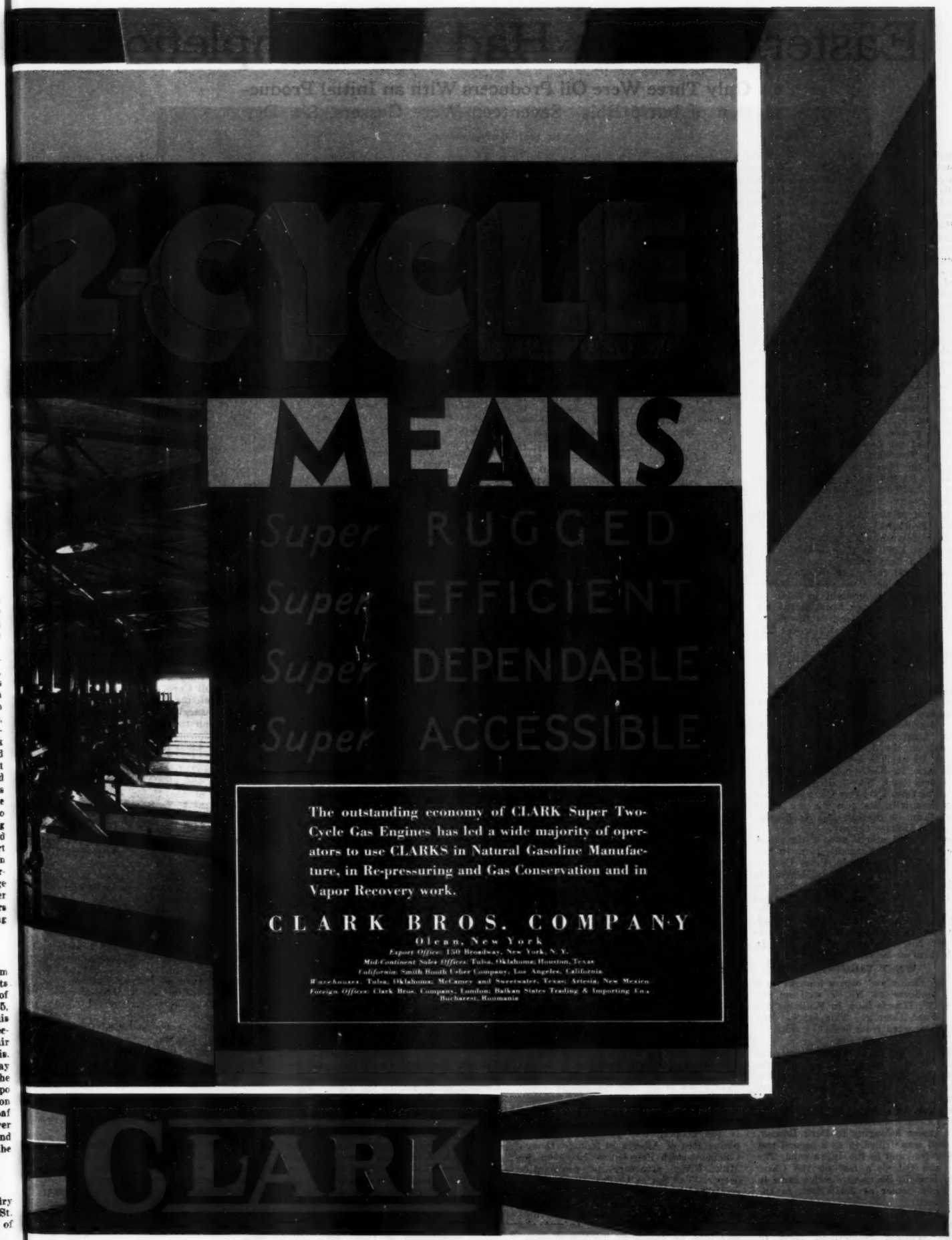
In Hancock County, Huff, Rosella and others' No. 1 Parrott farm, a mile north of Pellville, shows for 25 bbls. initial.

In Barren County, unknown parties' No. 1 Christ Wilson farm, in the north part of the county, near the Hart County line, is reported good for 50 bbls. of oil and 500,000 feet of gas. Unknown parties' No. 1 King Edwards farm, same area, is also a 50-bbl. initial producer. Unknown parties' test on the Mrs. S. S. Guinn farm is a light gas well, while the test on the Joe Curle farm showed some gas but is listed as a dry hole.

In McLean County the McLean Development Co.'s No. 2 on the G. B. McManama farm, in the Calhoun Field, is good for 20 bbls. initially in the Jett sand from 1,101 feet.

Hupp & Duff struck a heavy gas volume reported around 3,000,000 feet at their test on the W. T. Spence farm, about three-fourths mile south of the Bradley farm oil gusher in Logsdon Valley and around 5 miles southwest of Munfordville, in Hart County, at a depth of 325 feet, but is going deeper in hopes of getting the rich oil pay.

T. C. Morgan is rigging up for No. 1 on the Bob Howard farm in Daviess County. In Hancock County, Hupp & Duff have a fishing job 450 feet in No. 2 Claud Bolling farm. Cox, Ewell and others are drilling No. 2 Bolling Sisters farm, same field, and the Olean Petroleum Co. is nearing pay sand on No. 1 Lee Richards farm.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CLARK

Eastern Fields Had 26 Completions

Only Three Were Oil Producers With an Initial Production of but 6 Bbls. Seventeen Were Gassers, Six Dry

By Staff Correspondent

PITTSBURGH, Pa., Apr. 6.—The eastern fields reported 26 completions during the week. Seventeen were gas wells and 6 were dry holes. There were 3 oil producers with an initial production of only 6 bbls.

Robinson & Ball and others drilled in a test on the J. W. Miracle farm in Section 15 of Franklin Township, Monroe County, that produced 2 bbls. after being shot at 1,253 feet and in the Lime sand. In Salem Township, Washington County, Bay & Weppler and others brought in a 2-bbl. producer on the Cristopher Lauer farm in Lot 40 at 339 feet and in the Buell Run sand. The test of the Preston Oil Co. on the W. B. Clark farm, in the SW, Section 16, Perry Township, Coshocton County, was dry in the Clinton sand at 3,163 feet.

The Ohio Fuel Gas Co. brought in a test on the B. F. Slack farm in Washington Township, Muskingum County, at 4,058 feet, in the Red Rock sand. It is a small gasser. This well had a small showing of gas in the Clinton sand. In Carthage Township, Athens County, Section 26, the Shade River Oil & Gas Co. drilled in its test on the F. W. Chapman farm at 1,210 feet, in the Grit sand, for a small gasser.

The test of the Miller Oil Co. on the Miller Brothers farm in Section 27, Madison Township, Columbiana County, came in at 1,060 feet, in the Berea Grit sand, for a light gasser. There was no showing of oil at any stage. In Marion Township, Noble County, E. O. Burbacher and others brought in their test on the F. M. Calland farm in the NE, Section 32, at 1,287 feet, in the Keener sand. It is producing a little over 500,000 feet of gas a day. This well is within the defined limits of the old Summerfield gas pool.

Drilling in Ohio

In Ashland County there are three wells reported as drilling, all in Lake Township. The Great Lakes Oil Co. has two tests drilling, one on the L. M. Spreng farm in Section 17 at 550 feet and one on the J. M. Mosher farm in Section 18 at 300 feet. On the David Horn farm in Section 4, A. G. Talbot and others have No. 3 drilling at 575 feet. The Ohio Fuel Gas Co. has reached 2,750 feet with its test on the Clark Miller farm in Section 11, Washington Township, Holmes County.

Bauman and others have a rig standing on the Elmer Vansickle farm in Section 5, Reading Township, Perry County, and in Harrison Township David L. Mellick, trustee, has a rig standing on the H. E. Stoneburner farm in Section 18. Both are for test wells. In Fallsburg Township, Lick County, J. W. Rutledge and others have a location in readiness for No. 4 well on the William D. Booth farm in Section 14.

WEST VIRGINIA

G. W. Grant and others brought in a 2-bbl. producer at No. 7 well on the George W. Henrie farm in Williams district, Wood County. This is the only oil well reported from West Virginia.

Gas Wells

Calhoun County reported three gas wells. On the waters of Big Run, the United Fuel Gas Co. brought in a 500,000-foot gasser on the Ida Shroyer farm in Sheridan district. This well was drilled in a 1,780 feet. W. H. Jackson's farm in Center district is the location of a fair gasser belonging to Park Bowser. This well was drilled in as a second test at 1,847 feet and in the Injun sand. The Mid Penn Oil Co.'s test on the Chess Poling farm in Sherman district came in as a light gasser at 2,278 feet, in the Injun sand.

In Cabell County, W. H. Kirtley & Co. drilled in an estimated small gasser on the William Sunderland farm in Grant district. This well came in at 2,149 feet and is producing natural from the Berea sand. It may be decided to drill it deeper. G. S. Coon got another gasser on the A. J. Coon farm in Sherman district, Boone County, at 2,237 feet. It is No. 3 and a light gasser.

In Union district, Lincoln County, E. R. Cameron drilled in a gasser in the Berea sand on the Julia Breedlove farm, and the Dixon Oil & Gas Co. got a fair gasser at 3,125 feet on the Harvey tract in Warfield district, Mingo County. The Manufacturers Light & Heat Co.'s No. 3,478 on the M. Bartrug farm in Church district, Wetzel County, came in as a light gasser. The top of the Big Injun sand was reached at 2,200 feet and gas was found at 2,244 feet. This well may be drilled deeper. In McElroy district, Tyler County, the Union Gasoline & Oil Corp. brought in a test on the A. E. Lemasters farm as a light gasser in the Gordon sand at a depth of 3,129 feet. This well produced gas at 2,936 feet.

In Falls district, Fayette County, the test of Godfrey L. Cabot on the R. R. Huddleston farm was dry at 2,220 feet. This well was drilled through the Berea sand. In Washington district, Pleasants County, Dinsmore & Co. got a dry hole in No. 6 on the Boley heirs' farm after drilling to the Cow Run sand, but Albert Neely got a gasser on the Hugh Morris farm in Union district of the same county. The Reno Oil Co. brought in a gasser on the Willis Gainer farm in Union district, Ritchie County. This was a test well.

Drilling in West Virginia

An odd report from Wood County is that nature has assisted man in his recovery of oil when the water from the McPherson Oil Co.'s No. 1 on the L. A. Goodwin farm in Walker district, leaked into its No. 7 with the result that under pressure the production of No. 7 from the Berea grit sand has been doubled. The water is reported to have leaked into the well from the Big Injun sand.

No. 5, which is an old well drilled deeper, of H. N. Rinehart on the T. E. Moore farm in Grant district, Ritchie County, is down to 1,495 feet, and Morris and others have reached 2,180 feet with their test on the Isaac Weekley farm in the same district. C. H. McClure and others have a rig standing for a second test on the same farm, and Ross Richards has made location on the school lot in the same district and county. C. R. Lamp and others have their No. 1, an old well drilled deeper, shut down at 1,930 feet, on the Ama Dotson farm in Grant district.

C. B. Lewis and others have a rig standing on the W. P. Baker farm, and Godfrey L. Cabot has made location on the J. N. Eddy farm in Murphy district, Ritchie County. The test of J. W. Deem and others on the W. W. Lawrence farm in Grant district has been rigged up but at present is shut down. Location has been made by the Continental Oil Co. for a second test on the N. T. Mason farm in the same district.

Clem Morris and others have a fishing job at 1,530 feet in their test on the W. P. Roberts farm in Dekalb district, Gilmer County. Part of the material is on the ground on the Harley Gainer farm in the same district. A. E. Ellis and others are the operators. In the same district the Bowser Oil Co. and F. G. Davis and others have their tests shut down. The second test of the Bowser Oil Co. on the John R. Ralston farm is shut down at 1,800 feet, while the test of F. G. Davis and others is shut down at 1,875 feet on the Alva J. Hardman farm.

McCall and others are rigged up on the W. A. Moore farm in DeKalb district, Gilmer County, as is the Hope Natural Gas Co. with its No. 6,251 on the W. A. Gainer. The Hope Natural Gas Co.'s well is an old well being drilled deeper. Frank Golden and others also have a rig standing on the H. E. Engle heirs farm in the same district.

In Marshall County the Manufacturers Light & Heat Co. has three wells drilling. In Liberty district, its No. 3,380 on the W. H. Loper and others farm is drilling at 1,600 feet and No. 2,994, which is being drilled deeper, on the P. and I. P. Chambers farm is past 2,200 feet. In Cameron district its No. 3,470 on the Dora Doman and others farm is at 250 feet, and in Liberty district the same company has a rig standing on the August Wendt farm for well No. 3,474. The Myers Oil Co. has a rig standing on the C. M. Strickland farm in Sandhill district. The test of the Valley Oil & Gas Co. has passed 500 feet with their test on the W. E. Patterson farm in Liberty district.

H. C. Zogg has made location for a third well on the Maddox heirs farm in Scott district, Putnam County, and the Celia Oil & Gas Co. has done likewise for a fifth well on the John Tormey farm in the same district and county. In Raleigh County, Godfrey L. Cabot has reached 900 feet with his fifth well on the Beaver Coal Co. tract in Slab Fork district, and has a rig standing for a third well on the property of the same company in Trap Hill district.

SOUTHWEST PENNSYLVANIA

Washington County was the scene of the completions reported for Southwest Pennsylvania for the past week. Two were gas wells and three were dry holes, making a total of five completions.

William Dillmyer & Co. drilled their test on the George Dunbar farm in Cross Creek Township in at 2,640 feet. The well is estimated as a light gasser, gas being produced from the Fifty-foot sand. In East Finley Township the Union Gasoline & Oil Corp. got a gasser as a second test on the J. Montgomery farm.

The Carnegie Natural Gas Co. got a dry hole on the Frank Moniger farm in Amwell Township. This well was completed at 4,340 feet and was dry in all the sands. No. 3 well of E. J. Young & Co. on the C. L. Taggart farm in Canton Township was also dry and at 2,729 feet. The test of the Union Gasoline & Oil Corp. on the F. L. Sprowls farm in East Finley Township was dry upon completion.

Drilling in Southwest Pennsylvania

In Allegheny County the Lorish Oil Co. is at 2,250 feet and shut down with its third well on the C. Lorish farm, and the Hoffs Oil Co. is drilling at 400 feet on its test on the M. L. Cooper farm in Independence Township, Beaver County.

In Greene County the Manufacturers Light & Heat Co. has reached 2,750 feet in its test on the G. M. Scott farm in Morris Township, and the same company is skidding a rig for No. 3,443 on the Felix Bell farm in Wayne Township. In Center Township, J. B. Orndoff has a rig standing for a test on the J. E. Scott farm.

The Carnegie Natural Gas Co. has a fishing job in its second test on the George Bowers farm in Perry Township. This well is down to 2,800 feet. The test of D. L. Shafer & Co. on the William Jones farm in Wayne T ownship is shut down at 850 feet. The Peoples Natural Gas Co. is drilling at 3,006 feet on its test on the F. B. Haines farm in Perry Township.

No. 703 of the Natural Gas Co. of West Virginia is drilling at 1,900 feet. This well is on the S. A. Post farm in South Franklin Township, and the test of M. Green & Co. is down to 700 feet on the Craig farm in Donegal Township. Potts Brothers have a rig standing on the A. Woodruff farm in Chartiers Township.

SPRING COULEE STRIKE IMPORTANT; SHOW INCREASES ON DEEPENING

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 4.—The most important development in the Alberta fields in some months is the striking of strong showings of oil and gas in Alberta Pacific Consolidated Oils' No. 1, Section 15-4-23w4, on the Spring Coulee structure in southern Alberta. The test is unofficially reported drilled to 5,996 feet. It encountered a dolomitic formation at 5,935 feet with oil and gas showings; wet gas was reported strong at 5,943 feet but on deepening the oil show increased and the gas diminished. It was at first intended to continue drilling, but in view of the improved indications it was decided to test production. The oil is described as a light green crude and the gas as a wet gas similar to that from the Madison lime in the Turner Valley.

Alberta Pacific's No. 1 Spring Coulee is the deepest test yet drilled in the plains area of Alberta in footage, though Commonwealth Petroleums' No. 1 on the Milk River structure is geologically deeper. The Spring Coulee structure was geologized by Fisher & Lowrie of Denver and was originally leased by Canadian Exploration Co. and Frontier Development Co. The geologists defined the structure as extending northwest-southeast from a point 6 miles south of Spring Coulee and through that town to a point 5 miles north of St. Mary's River. Drilling was undertaken by Alberta Pacific Consolidated Oils, Ltd., of Calgary, under an agreement with Canadian Exploration Co. involving the development of a number of Alberta structures geologized and leased by the latter company. The Spring Coulee test has been drilling almost continuously since April 14, 1930, rotary tools being used.

The Spring Coulee structure has a considerable overburden of glacial drift, but outcroppings along the water courses indicated the formations underlying the structure ranged from the basal Edmonton to the Madison. Possible oil horizons were indicated in the Foremost, Milk River, Benton, Kootenay, Fernie and Madison horizons; and the geologists recommended a test to penetrate the deep horizons productive in the Turner Valley Field. In the actual drilling small shows of oil and gas were met in the upper horizons, but nothing approaching commercial production. A careful log indicated the lower Blairmore-Kootenay and the Fernie formations checked closely with Turner Valley. There is, however, some doubt whether the drill has actually entered the Madison or is still in the Fernie shales. The dolomitic formation now penetrated is shown by the cores to be close, but of the top 30 feet of the

(Continued on Page 108)

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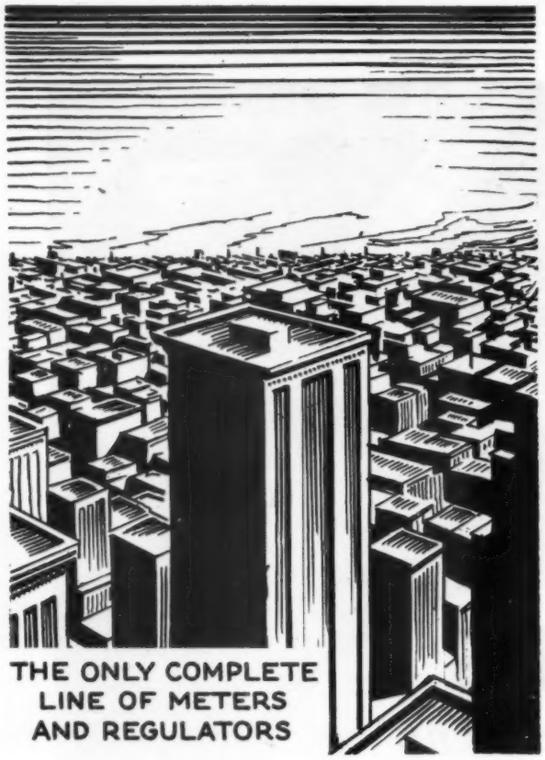

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Natural Gas Industry Developments

Tentative Program For Natural Gas Men At Memphis Meeting

A tentative program has been announced for the annual convention of the natural gas department of the American Gas Association in Memphis May 11-14.

All technical phases of the industry will be discussed in the light of experiences in many fields during the past year. Speakers scheduled to address the convention during its opening session at the Hotel Peabody include H. C. Cooper of the Hope Natural Gas Co. of Pittsburgh, chairman of the department; Alexander Forward, managing director of the American Gas Association; G. W. Gallagher of the East Ohio Gas Co. of Cleveland, and B. H. Gardner of the Columbia Gas & Electric Corp.

The afternoon session of the opening day, May 12, will be devoted to technical subjects in which experts of government bureaus will take part. These are H. S. Bean of the United States Bureau of Standards who will talk on "Gas Measurement," and E. L. Rawlins and W. B. Berwald, both of the United States Bureau of Mines. Mr. Rawlins will talk on "Gas Well Deliveries," while Mr. Berwald will discuss "Pipe Line Flow."

Problems in the "Compression and Transmission of Natural Gas" will be discussed by P. McDonald Biddison of the Southern Natural Gas Corp., while an outline of the principal technical and research problems now confronting the industry will be given by H. D. Hancock of Henry L. Doherty & Co.

The morning of Wednesday, May 13, will be devoted to a drilling symposium in which J. French Robinson of the Hope Natural Gas Co. will represent the East, B. M. Nowery of the United Gas Public Service Co. of Houston will represent Mid-Continent producers, and a representative of the Pacific Coast natural gas industry will describe problems encountered in his field.

A variety of subjects will be discussed that afternoon. E. N. Watkins of the Arkansas Natural Gas Corp. of Shreveport, La., will discuss a uniform classification of accounts for gas pipe line companies. Leakage problems will be taken up in a paper presented by J. A. Martin and L. B. Denning, Jr., of the Lone Star Gas Co. of Dallas.

The final session will be devoted to a symposium of production problems by S. W. Meals of the Carnegie Natural Gas Co. of Pittsburgh, who will represent the East, and R. M. Stuntz of the Cities Service Gas Co. of Bartlesville, Okla., who will represent the Mid-Continent producers.

ELECT NIAGARA GAS DIRECTORS

The directors of the new Niagara Gas Corp. are Michael M. Cohn, president, a director of the Marine Trust Co. of Buffalo; G. Vincent Grace, president of G. V. Grace & Co., Inc., and a director of American Electric Securities Corp.; A. Arthur Jenkins of the law firm of Jenkins & Carpenter; James O. Moore, attorney, of Buffalo; E. Howard H. Roth of Buffalo, partner of Glenny, Moll & Doolittle, and M. R. Stern, engineer, of Columbus, Ohio, president of Stern & Stern, Inc.

TO VOTE ON CITY PLANT

WELLINGTON, Tex., Apr. 6.—This city will vote in the near future on a bond issue of approximately $80,000, which will be used for purchasing and operating a municipal gas plant. Order for the election was issued upon the petition of Wellington voters.

AMARILLO GAS COMPANY COUNSEL CRITICIZES HUBER CO. CONTRACT

AMARILLO, Tex., Apr. 6.—A permanent gas supply for Amarillo is not guaranteed in the Huber Petroleum Co.'s contract with the city, declares Charles H. Keffer, attorney for the Amarillo Gas Co., in a letter written to Mayor Ernest Thompson. The Huber company is not bound under the contract to construct another line to Amarillo; and the contract is defective in other vital respects, Mr. Keffer alleges.

Pointing out that the "contract is wholely insufficient upon which to base a costly distributing system," Mr. Keffer outlines in the letter "only the most conspicuous" defects.

The city's obligation to buy 4,000,000 feet of gas each 24 hours beginning January 1, 1932, is referred to as a glaring defect. The city is bound to purchase this amount of gas, he says, regardless of how much it might use.

"The contract . . . does not guarantee a gas supply to the city of Amarillo for any special period of time, or in any quantity," Mr. Keffer states.

His letter follows:

Dear Mayor Thompson:

Many Amarillo lawyers believe that the contract entered into between J. M. Huber Petroleum Co. and the city of Amarillo with reference to the purchase of gas by the city for the proposed municipal gas system, is defective and unsatisfactory in many vital respects, so far as the city's interests are concerned. The Huber company's interests are carefully safeguarded throughout. Obviously the legal profession generally does not have a sufficient reason for publishing its convictions in the matter for the benefit of the public. Therefore, although the writer is an attorney whose firm represents the gas company, I feel justified as a citizen, and primarily upon my responsibilities as such, to point out a few of the glaring defects of this contract.

1. The contract provides that beginning January 1, 1932, and throughout the remainder of the period covered by the contract that the minimum amount

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TO CUT COAL TO MEET NATURAL GAS RATES

OMAHA, Neb., Apr. 6.—Freight rate reductions to enable coal operators to meet natural gas competition were urged by C. B. Huntress, executive secretary of the National Coal Association at a dinner meeting here.

"The railroads cannot maintain adequate transportation service unless they retain a substantial coal tonnage, which now yields them 17 per cent of their total freight revenue," said Mr. Huntress. "It can only be done, in many cases, by rate reductions which will permit the coal operators to compete with natural gas."

Mr. Huntress cited a statement made two weeks ago by F. W. Robinson, of Omaha, vice president of the Union Pacific system, that the railroads of the United States suffered a shrinkage in revenue of $132,750,000 during 1929 through displacement of coal by natural gas.

Mr. Huntress presented the scope of the Committee of Ten—Coal and Heating Industries. The committee was organized to promote heating satisfaction from coal, he explained.

GAS LINES TO RESORTS

LOS ANGELES, Calif., Apr. 4.—Gas mains for the mountains, taking natural gas for heating and cooking to the many resorts strung along the crest of the San Bernardino range, is being planned by the Southern California Gas Co., according to the announcement of H. C. McAllister, San Bernardino superintendent of the company.

The company serves practically all of the San Bernardino Valley towns with gas and the plan is to run the mains from these towns to the mountain resorts where people spend so many months each year, and in some cases live the year around.

Mr. McAllister says his company is making a careful survey of the resort section to determine the cost of piping the gas to these resorts. Just as soon as this survey is completed the company will decide just how much territory can be served.

ALLEGANY EXTENSION

HARRISBURG, Pa., Apr. 6.—The Public Service Commission has issued a certificate to the Allegany Gas Corp. granting it an extension of its producing and distribution area to include eight counties. The commission, however, refused to include Lackawanna and Luzerne Counties in the extension asked by the company.

The United Mine Workers of America had protested against extending the company's territory to Lackawanna and Luzerne Counties on the contention that this would have the effect of reducing the mining operations in the anthracite region.

The additional counties in which the company is licensed to operate now are Tioga, Lycoming, Sullivan, Wyoming, Clinton, Cameron, Elk and Bradford.

HOLGATE, OHIO, FRANCHISE

HOLGATE, Ohio, Apr. 6.—The Ohio Fuel Gas Co. has secured a 25-year franchise from the village of Holgate, in Henry County. The first two years the rates will be 30 cents per 100 feet for the first 400, 7 cents per 100 for the next 4,600, 6 cents per 100 for the next 10,000, 5½ cents per 100 for the next 185,000 and 5 cents per 100 in excess of 200,000. The minimum charge is $1. The following three years the rate will be the same except for that first charge is for the first 600, the second charge for the next 4,400 and the minimum is raised to $1.50. Seventy per cent of the property owners must sign for service before the company will start installation of the lines. New lines being laid from Oklahoma to the Detroit area are to furnish the gas.

VISITING TEXAS FIELDS

SAN ANTONIO, Tex., Apr. 6.—R. V. Delehanty, natural gas engineer of New York City and affiliated with the Columbia Gas & Electric Co., is in San Antonio, from where he is making an inspection of the Southwest Texas oil and gas fields. During his visit here he is the guest of J. E. Walsh. He has already made on inspection trip which included the Laredo Gas & Petroleum Co.'s gas well in northeastern Jim Wells County, No. 1 Wade. The well was opened up for the visitors and for more than an hour maintained a pressure of 1,200 pounds on 2-inch open flow. Mr. Delehanty is quoted as saying it is one of the best gas wells he has seen. The party also visited the Refugio Field.

MISSOURI INQUIRING ABOUT DISTRIBUTION

JEFFERSON CITY, Mo., Apr. 6.—The Public Service Commission has issued an order for an investigation to determine whether the Cities Service Gas Co. is a utility engaged in the distribution of gas in Missouri and required by law to file schedules of rates for gas so distributed, and whether the company should submit to the jurisdiction of the commission. The matter is set for hearing on April 15.

In addition to the Cities Service Gas Co., the order is directed to the Kansas City Gas Co., Carthage Gas Co., Joplin Gas Co., St. Joseph Gas Co., City Light & Traction Co., Webb City & Carterville Gas Co., Ozark Distributing Co., Springfield Gas & Electric Co. and Carl Junction Gas Co. These companies are engaged in the distribution of natural gas purchased from the Cities Service Gas Co., according to the order.

"It has come to the attention of the commission," the order says, "that Cities Service Gas Co. is, in some cases, distributing gas directly to consumer, and has an arrangement with certain of said distributors whereby the said distributors receive a fixed payment for each 1,000 feet of gas transported and distributed by them to industrial consumers and turn over the balance to said Cities Service Gas Co., the rates at which said industrial gas is sold being below the rate charged said distributors for gas purchased by them at wholesale.

"The schedules of rates for the sale of said industrial gas are filed by the distributing companies, and the commission has heretofore made formal request upon said Cities Service Gas Co. to file with this commission schedule or schedules of rates for the sale of industrial gas.

"It is the opinion of the commission that an investigation should be made by the commission to determine whether the Cities Service Gas Co. is distributing gas directly to consumers, and to find the relationship existing between said Cities Service Gas Co. and the various distributing companies served by it in the sale of industrial gas in order that a finding of facts may be made whether said Cities Service Gas Co. is a public utility subject to the jurisdiction of this commission and required by law to file its schedule of rates for all gas which in fact and in law is being distributed by it."

GAS FOR CUNNINGHAM

ELDORADO, Kans., Apr. 6.—A gas supply for Cunningham, Kans., may be obtained from wells within the townsite. L. D. Davis of Eldorado, who has been given the gas franchise there, will begin drilling a test at once on town lots. The belief of Davis that gas will be found is based on the fact that about 10,000,000 feet of gas was found in the Frank Miles wildcat test, drilled 2 miles north of Cunningham by the Skelly Oil Co. The Miles well also yields oil, but is shut in indefinitely for pipe line outlet.

LOWER MERCED RATES

LOS ANGELES, Calif., Apr. 6.—The Railroad Commission has acted to make effective on April 6, 1931, reduced gas rates to cover the service of straight natural gas in the city of Merced. The present service of 550 B.t.u. manufactured gas being rendered to the gas consumers in Merced by San Joaquin Light & Power Corp. will shortly be superseded by the service of 1,150 B.t.u. natural gas. The newly authorized rates will effect a reduction in consumers' gas bills of from 40 to 50 per cent and will mean an annual saving to these consumers of approximately $50,000.

Personal Paragraphs About Oil Men

J. Paul Getty has been elected a director of the Pacific Western Oil Company.

* * *

John Sheehan, Sheehan Pipe Line Construction Company, Tulsa, is spending two weeks in Pittsburgh, Pa.

* * *

H. B. Burlow, sales manager, Templeton Kenly Company, Chicago, Ill., is calling on the supply companies in Oklahoma and Texas.

* * *

Howard S. Splane, president of Driftmeter, Inc., has recently returned from a trip through the active fields of Texas and Louisiana.

* * *

C. P. Porter, superintendent of production for the Blackwell Oil & Gas Company in the Greater Seminole area, has had his district enlarged to include East Texas.

* * *

E. B. (Ted) Holmes has returned to Petrolia, Ontario, from Persia where he has been drilling for the Anglo-Persian Oil Company. He will return to Persia after a few months' furlough.

* * *

Bradford M. Melvin has resigned as vice president and general counsel of the Richfield Oil Company of California in order to resume private practice of law in San Francisco where he is a member of the law firm of Gregory, Hunt & Melvin.

* * *

A. J. Sanford, vice president in charge of sales of the Timken Steel & Tube Company, Canton, Ohio, was a visitor in Tulsa on his return from a month's trip to the West Coast where he contacted the trade.

* * *

E. R. Rich, vice president of the General Petroleum Corporation and a director of Standard Oil Company of New York, and Mrs. Rich returned to Los Angeles following an absence of several weeks spent in New York.

* * *

Frank L. Wagar, formerly in charge of Veedol sales in Washington, Oregon and Idaho, has been made Veedol sales manager for the entire Pacific Coast territory, reporting direct to P. E. Allan, domestic sales manager for the Associated Oil Company at San Francisco, Calif.

* * *

Carl E. Sampson, formerly assistant general manager of the General Petroleum Corporation, resigned his position with the General Petroleum to become secretary-treasurer of the Kettleman North Dome Association, which recently opened offices in the Richfield Oil Company Building in Los Angeles.

* * *

Albert L. Eigenbrot has joined the staff of the M. W. Kellogg Company, manufacturer of refinery and power plant equipment, Jersey City, N. J. David M. Gordon has entered the South American service of the Standard Oil Company of New Jersey. Both are recent graduates of the course in fuel and gas engineering at the Massachusetts Institute of Technology.

* * *

Walker S. Clute, identified with the oil and gas industry since 1915 in California, Rocky Mountain region and South America, has assumed the duties of district engineer for the Tulsa district of the United States Geological Survey with offices in the Wright Building. This district is a branch of the Mid-Continent division of the geological survey whose headquarters are at Muskogee, Okla., with John M. Alden, supervisor, oil and gas operations.

* * *

A party of seven scientists from the laboratories of the Standard Oil Company of Indiana flew to Indianapolis, Ind., to attend the meeting of the American Chemical Society. Drs. W. H. Bahlke, T. N. Rogers, F. W. Sullivan, W. G. Whitman, V. Voorhees, J. K. Roberts and A. W. Neeley traveled in the company's airplane, the Stanolind III, whose motors used a new synthetic lubricating oil described in a paper presented by Doctors Sullivan, Voorhees and Neeley.

Thomas C. Kieruliff has resigned as president of the North American Oil Consolidated Company.

* * *

Vernon Taylor, eastern operator and official of the Peerless Oil Company, is wintering in California.

* * *

T. J. Waggoner, Jr., was elected president of the Wichita Falls, Tex., Chamber of Commerce, succeeding Maurice Cheek.

Men of the Industry

William Reinhardt

William Reinhardt, recently elected general manager of the Kettleman Hills North Dome Association, which has assumed control of unified development in the North Dome of the Kettleman Hills Field, was vice president of the Shell Oil Company of California just previous to assuming his new position. Mr. Reinhardt joined the Shell Oil Company as a field engineer at Oilfields, Calif., during the latter part of 1917 and continued in the employ of that concern for the greater part of the following four years. In recognition of his ability, he was appointed assistant general field superintendent of the Roxana Petroleum Corporation in January, 1921, but his services in the Mid-Continent area were terminated several months later by a transfer back to California when the Shell Oil Company discovered the Long Beach Field of Los Angeles Basin.

The Shell company was faced with a prospect of having to cope with an intensive town lot drilling campaign in that field and the company accordingly dispatched a fast wire back to the Roxana for "Bill" Reinhardt, a very efficient and capable field man. He immediately returned to California and in October, 1921, was appointed superintendent at Long Beach and placed in charge of all the Shell's drilling operations in that field. During his regime the Shell built up a very substantial production at Long Beach due to the successful completion of a large number of prolific wells and efficient handling after being brought in.

Two years later, during the latter part of 1923, Mr. Reinhardt was promoted to be assistant general field superintendent with headquarters at the Los Angeles office and became general field superintendent early in 1924. Mr. Reinhardt was made manager of production on July 1, 1926, succeeding William C. McDuffie, who at that time became general manager of production for the entire Royal Dutch interests. He was subsequently elected vice president of the Shell Company of California, resigning March 1, 1931, in order to accept his present position.

Frank Gouin, geologist and independent oil operator of Duncan, Okla., was a visitor in Tulsa during the week.

* * *

W. P. Clark, manager of petroleum industry sales for the Sherwin-Williams Company, Kansas City, Mo., was a recent visitor to Tulsa.

* * *

Ed Siebert, who has been assistant to C. E. Sampson of the General Petroleum Corporation, has been transferred to the sales department of that company for special duty.

* * *

Edwin Higgins, managing director of the California Oil and Gas Association, recently addressed the monthly meeting of the Los Angeles Chapter of the American Institute of Mining Engineers.

* * *

Dr. Ralph Arnold has returned to Los Angeles from Washington, D. C., where he was chairman of the governor's delegation representing California independent producers at the oil relief conference.

* * *

Alfred J. Williams, vice president of the Simms Oil Company, has been elected a director at the last annual meeting of the company's directors. He will continue to make Dallas, Tex., headquarters.

* * *

Martin Van Couvering, of Los Angeles, Calif., recently appointed to the committee on petroleum economics by the Federal Oil Commission, left for Washington, D. C., to attend a meeting of the board.

* * *

Carl Douglass, assistant superintendent of production in the Greater Seminole area for the Pure Oil Company, has been transferred to the Kiefer district where he will be in charge of the company's production.

* * *

A. T. Jergins, president of the Independent Petroleum Association of California, has returned to Long Beach following an extended visit in Sacramento in conjunction with legislation pending before the California legislature.

* * *

A. C. Anderson, of Omaha, Neb., has been appointed sales representative in western Iowa and eastern Nebraska for Gustafson Brothers Oil Company. Mr. Anderson has been associated with the Deep Rock Oil Corporation and with Spencer Petroleum Company.

* * *

W. R. Allen, superintendent of production for the Shell Oil Company in the San Joaquin Valley, California, suffered a broken arm in a traffic accident in Los Angeles recently but his many friends will be glad to learn he is well on the road to recovery as no other serious injuries were suffered.

* * *

Fred H. Merritt, petroleum geologist, is inspecting Charlevoix, Antrim, Montmorency, Ogemaw and Oscoda Counties in the northern part of the lower peninsula of Michigan, for the Danciger Oil & Refining Company of Tulsa, and is making his Michigan headquarters at Boyne City, Mich.

* * *

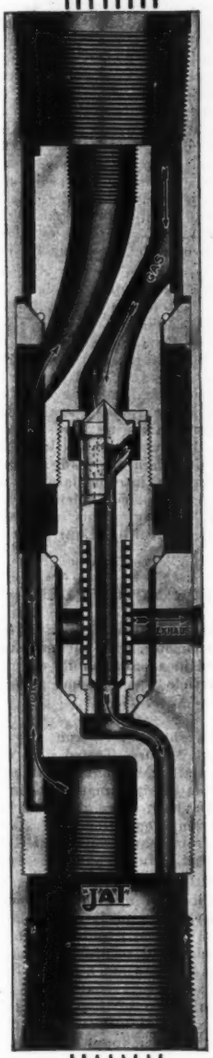
Hayes McCoy, of the legal department of the Empire Oil & Refining Company at Bartlesville, Okla., was elected president of the Osage Oil and Gas Lessees Association at the annual meeting March 31, in Tulsa, succeeding R. F. MacArthur, vice president of Barnsdall Oil Company. W. P. Z. German was elected vice president; W. C. Franklin, oil attorney, was re-elected treasurer; and Harry H. Smith, secretary-counsel.

* * *

H. W. Parmelee is leaving southern California for the time being to take charge as chief engineer of the construction of a gas transmission line from northern Montana to the cities, mines and smelters in the southern part of the State. In addition to the construction of the pipe line there will be compressor stations and telephone lines. Because of Mr. Parmelee's moving to Montana it was necessary for him to tender his resignation as secretary-treasurer of the California Natural Gasoline Association.

"JAI"

DISPLACEMENT PUMPS



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THE NATIONAL SUPPLY COMPANIES

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

OZONATION OF PETROLEUM PRODUCTS

Have you any information about the treatment of gasoline or other petroleum products with oxygen or especially ozone? If you can mention any articles on the subject the favor will be appreciated.—S. W. M.

The action of both oxygen and ozone is discussed by Gurwitsch-Moore, Petroleum Technology, pages 37 and 55. With reference to the action of ozone it is explained that the action of ozone on the various hydrocarbons, with double linkages, is to form additive compounds called ozonides. These are unstable and some of them are explosive. Investigations by Molinari and Fenaroli have shown that 8° to 10° C. (46.4°-50° F.) the lower fraction of Russian kerosene produced 12 per cent and the higher fraction 32 per cent of an ozonide in the form of yellow flakes. Bushong from the fraction of Oklahoma kerosene boiling between 296° and 298° C. (564.8°-568.4° F.), obtained after five days of onozation a yield of 10 per cent of an ozonide of brick red color, and only partially soluble in dry ether. On evaporating the ether solution a red syrup remained, which slowly consolidated to a resinous mass. The composition corresponded to $C_{17}H_{28}O_4$.

There is a brief article in The Petroleum Times, August 16, 1930, page 259, describing the Bruzac process from which the material following is taken:

This process is based on the use of ozonized air and is explained as applied to the treatment of benzol.

In a crude benzol the compounds which are most susceptible to oxidation and to resinification are in the first place the oxides, the stable compounds remaining unattacked. A portion of these unstable compounds settles out immediately after ozonization by ozonized air, as a flocculent precipitate of reddish-brown color. Of the remainder in solution, a second portion is eliminated by a soda washing (10 c.c. of a solution of 20 per cent NaOH per liter being most suitable) and decantation. The remainder, which still rests in solution, is left behind in the residuum from distillation, the molecular weights and boiling points of the compounds being very much higher than those of the carburants.

The process may be described thus: Crude benzol is first treated with ozone by passing through it a stream of ozonized air, at ordinary temperature and pressure, for a period not exceeding one hour. The ozonizing apparatus is the standard type used for the production of ozone, and the apparatus produces 10 cubic meters of ozonized air per kilowatt-hour. The quantity of ozonized air necessary for treating the crude benzol is 100 volumes of air to 1 volume of benzol, or a smaller volume if more highly ozonized air is employed. The time of treatment should be limited to one hour, and may be as little as three-quarters of an hour.

During the treatment by ozone heavy white clouds of gas are given off and the crude benzol becomes darker, while a brown precipitate forms which quickly settles to the bottom of the vessel after the flow of ozonized air is stopped. The precipitate is allowed to settle and is then removed, and the benzol is then washed with a solution of soda which becomes a reddish-mahogany color. The color of the benzol is now light yellow and deodorization is complete. The soda solution is run off and the benzol is distilled, when a clear, colorless, deodorized product is obtained.

WHALE OIL IN FOOD PRODUCTS

Whale oil is said to be used on a large scale in Europe for the manufacture of special food products. Can you give me some information as to any recent developments or the extent of this business? Do you know of any of this oil being imported into the United States and used for any food product?—L. R.

According to Department of Commerce reports, a process has been invented for removing the strong fishy odor and taste from whale oil. This process, the discovery of a German chemist, in addition to the removal of these objectionable features, hardens the fat by hydrogenation and renders it a satisfactory material for the preparation of butter substitutes. The use of this oil has affected the exportation of lard from the United States. Last year 3,000,000 bbls. of whale oil were produced, one-half of which sold to the European margarine pool. The average whale is said to produce around 100 bbls. of oil. This means that 30,000 whales were slaughtered last year which yields 1,200,000,000 pounds of oil, or the equivalent of one-half the total lard produced in the United States.

So far as we can learn from the reports available, whale oil is not used in the United States in the preparation of any food products. Its use in the petroleum industry is confined to the manufacture of greases and special lubricating oils.

It is strange that overproduction in the whale oil industry is offering a problem similar to that existing in the petroleum industry; the foreign experts estimating the 1930 season yield at 3,000,000 bbls. This is an increase of 500,000 bbls. over the previous season, and 1,200,000 bbls. more than was reported for the 1928-29 catch. Whaling companies are now faced with the problem of stabilizing production on a profitable basis. It is said that production has been increased beyond the normal capacity by the employment of oil tankers to supplement the great floating "factory" ships, which can handle more oil in a season than they can themselves store.

These companies have up to the present time been paying exceptionally large dividends, but with this increased production and lower prices many are of the opinion that the "whales are likely to outlast some of the whaling companies."

ANILINE POINT AND ANILINE NUMBER

What is the meaning of aniline number used in connection with gasoline? Is this the same as aniline point? If there is any difference would you kindly explain, also as to how they are determined?—L. H. O.

Aniline point is a temperature observation of value in hydrocarbon analysis, based on the fact that the critical solution temperature of a hydrocarbon mixture in aniline is affected by the quantity and kind of hydrocarbon present. It is the temperature at which equal quantities, volumes, of the hydrocarbon and aniline are completely miscible.

Some further details and a few examples of aniline points following are from D. A. Howes, Chemical Examination of Gasoline and Light Mineral Oil, J. Instn. Pet. Tech.; 16, 54, 1930.

The original investigators, Chavanne and Simon, observed that the paraffins have the highest critical solution temperatures, the aromatics the lowest, and the naphthenes and olefines intermediate. Subsequently it was found that equal quantities of benzene, toluene and ortho-xylene produced identical depressions, but that meta and para-xylenes lowered the aniline points less than benzene or toluene. Tizard and Marshall proposed that the difference in aniline points of a gasoline before and after sulphonation with 98/100 per cent sulphuric acid should be used as the basis for the determination of aromatic content.

A very small quantity of water has a decided influence on aniline points. The presence of 1 per cent water raises the aniline point of n-heptane 6.2° C., and that of cyclohexane 5.6° C. Therefore the aniline used should be dry and pure. It is usual to standardize the aniline against normal heptane. The aniline point of n-heptane is 68° C., but as aniline is hygroscopic it is usual to select an aniline that will show an aniline point of 70° C. for normal heptane.

Howes concludes that: (1) The aniline points of n-paraffins increase with rise of molecular weight. (2) The aniline points of iso-paraffins are higher than those of the corresponding normal paraffins. (3) The aniline points of naphthenes are lower than those of paraffins, are very irregular and range from 20° to 60° C.

A number of aniline points are given in the table, from which the following have been selected:

	Aniline points °C.
n-Pentane	72.0
n-Hexane	69.0
2-Methyl pentane	73.8
n-Decane	77.5
Cyclo pentane	18.0
Cyclo hexane	31.0
Amylene	14.5
Hexene	17.0

The details of the method are to be found in the literature mentioned by Howes. Briefly, equal quantities, 10 cc. of the dry sample and 10 cc. of aniline, are placed in a test tube provided with a stirrer and thermometer. This tube is set in a water bath, the temperature of which is slowly raised until the stirred mixture becomes clear, when the temperature is noted. Then the bath is cooled and the temperature recorded when the cloud becomes dense enough to obscure the thermometer bulb. Usually the temperature remains constant for a few seconds at this stage, and is recorded as the aniline point. If this temperature is uncertain the previous clear point is reported as the aniline point.

Aniline number or equivalent is a term employed to designate the knock rating of a motor fuel. One definition of the term and the method for determining it is that of C. K. Reiman, Quantitative Antiknock Testing, Ind. Eng. Chem.; 19, 1,055, 1927. The test engine is the Midgley modified Delco.

"Let us assume that the two standard fuels contain respectively 2.8 and 3.2 per cent aniline—the unknown we expect to come between these two. We would first adjust the engine as to compression ratio, speed, throttle and spark, so that a modest degree of knocking will be evidenced on the 3.2 per cent aniline solution. After running for a few minutes on this we would shift to the lower standard fuel, which would knock considerably more. The cc. of gas per minute in the Midgely apparatus might be 0.3 and 1.3 respectively; which would be a convenient order of difference. Should the knocking be too severe on the poorer fuel or the volume of gas in the two cases not of the order mentioned changes in the throttle and field voltage, maintaining the speed always constant at about 1,100 r.p.m., would be made until such was the case.

"The motor is then run on each of the two standard fuels for 10 or 20 minutes, making minute readings of the cc. of gas produced. It is then run for 10 or 15 minutes on the unknown, and finally again on the two standards. The average cc. of gas per minute for the two standard fuels is then plotted against the per cent aniline in these mixtures. From this plot and the cc. of gas produced by the unknown fuel can be read the per cent aniline in the intermediate standard fuel which is the equivalent of the unknown A.K. rating. This per cent aniline we call the Aniline Equivalent of the unknown fuel."

DUST FOR MOTOR FUEL

Could you locate for me a recent article describing experiments with various kinds of dust as used in an automobile engine? I think the article was in some government bulletin.—A. C. H.

There was a short article on Use of Dust Fuel in Motors Tested, in the United States Daily, March 17, 1931, and it may be this is the information desired. According to David J. Price, chemical engineering division, Department of Agriculture, dust from many sources will be available for motor fuel should the supply of gasoline fail at any time.

Great quantities of dust are removed from grain elevators and factories daily as a precaution against explosions which have had disastrous results at many plants, and have caused much loss of life. It has been shown that coal dust is a very economical form of fuel, and this has come into wide use. Tobacco factories have only recently been found to produce explosive dusts.

Grain smut dust gives a more powerful explosion than coal dust, and many threshing machines are destroyed by such explosions. In one period of six weeks, 300 threshers were wrecked by such explosions.

Vacuum cleaning systems are used in some plants to eliminate the dust explosion hazard. This makes the dust easily available for use as fuel.

Starch, sugar and grain dust are among those suitable for this use. It is probable that starch will prove better than coal dust in some respects, particularly in that it does not contain abrasive materials which wear machinery.

Tests in the Department of Agriculture have proved that motors can be run on such dust. In addition, a German inventor has employed dusts in running Diesel engines successfully. The practice has not developed as yet on a commercial scale, however.

Another World's Record—With the Help of Baker Cement Equipment—6766 feet of 13⅜"—68-pound Casing—230 Tons—Landed Safely and Cemented

Baker Cement Float Collar

Here's News—Big News—A Job which was considered impossible of accomplishment by many, has been done successfully, with the able help of Baker Cement Equipment.

We quote, from the Coalinga Daily Record, of March 18, 1931: "Another drilling record was established in the north dome of Kettleman Hills yesterday afternoon when the North American company, operating on Blauvelt lease, section 36, 21-17, landed the longest string of 13⅜" casing ever put into an oil well in any field in the world.

"The task of landing and successfully cementing this long, heavy string of pipe was considered by many an almost impossible task, and representatives of practically every company interested in the Kettleman Hills, as well as others, interested in the industry, were on the lease to witness the operation, which has proven beyond any question the feasibility and practicability of handling such a string of large-size casing.

"The time required in completing the job was 18 hours and 40 minutes, from start to finish."

This string of 13⅜" casing weighed 460,088 pounds, or 230.044 Tons. It was equipped with a Baker Cement Float Collar and a Baker Cement Whirler Shoe—see illustrations on this page.

This string of casing cost approximately $30,000—a lot of money. The insurance provided by Baker Cement Equipment, to float it and land it safely, as well as to assure a good cement job the first trial, WAS SLIGHTLY LESS THAN ONE PER CENT OF THE COST OF THE STRING.

Thus has another formerly impossible job been made possible and SAFE by the great strength and excess safety factors of Baker Cement Floating, Guiding, and Cementing Equipment.

If Baker Cement Equipment can handle the toughest jobs with safety, it can meet any other requirements, of any operator, under any conditions.

There are ten items in the complete line of Baker Cement Equipment, and they offer an almost infinite variety of combinations which will take care of any possible floating, guiding, or cementing problems.

Baker Cement Equipment offers all of the advantages of strength and safety, on any length of string — long or short — with none of the disadvantages of equipment containing metal parts. Use the best—it is cheapest in the long run.

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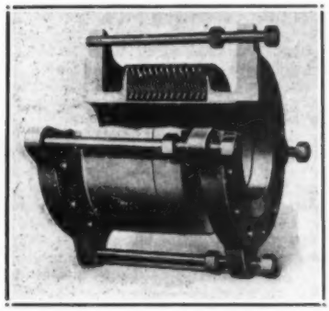
Oil Industry Equipment and Supplies

FLEXODISC EXPANSION JOINT NOW ON MARKET

The Croll-Reynolds Engineering Co., 17 John Street, New York, has placed on the market the FlexoDisc expansion joint, a new type of expansion joint for pipe lines which permits free movement of the piping without strain through the use of a flexible heat-treated nickel-steel expansion element, welded to forged-steel flanged heads which are guided relative to each other to permit longitudinal movement only. A special design is offered where lateral or angular misalignment must be provided for.

The expansion element is a completely



welded assembly of corrugated nickel-steel discs. After welding, which is done by the General Electric atomic hydrogen process, the complete element is heat-treated to obtain uniform quality, maximum strength and freedom from all local stresses due to welding. This construction, requiring no packing, is declared to be leakproof.

In operation, the movement of the FlexoDisc expansion joint is analagous to the action of a coil spring, in that the element takes up the expansion and contraction of the piping by the elastic deflection of the plates. Therefore, since the stresses are entirely within the elastic limit, the life of the element is believed to be practically unlimited.

Where corrosion is severe stainless steel construction is used. Complete information is given in bulletin No. 40-W which may be obtained from the company.

GOULDS PUMPS PROMISE SHIPMENT IN 24 HOURS

Twenty-four hour shipment of complete centrifugal pumps, either from the factory, branch warehouses or from a distributor is promised by Goulds Pumps, Inc., Seneca Falls, N. Y., on the company's new Flexi-Unit line, just brought on the market.

The Flexi-Unit centrifugals comprise 11 standard pump units, with changeable impellers, and 9 universal bedplates for mounting any size motor from one-fourth to 50 horsepower with speeds of 1,450 to 3,450 revolutions per minute. From this limited stock of parts, 150 pumping combinations can be produced, for capacities from 10 to 1,100 gallons per hour, at heads to 350 feet. According to the manufacturers, the Flexi-Unit line will eliminate long delays.

LUBRICATED PLUG COCK VALVE

A new lubricated plug cock valve, the Nordstrom K2, has been put on the market by the Merco Nordstrom Valve Co. This valve is for high-pressure service such as christmas trees at Kettleman Hills and for high-pressure slush lines. It is a gear-operated valve, completely lubricated under hydraulic pressure. It is tested to a working pressure of 3,000 pounds and must meet a laboratory test of 6,000 pounds.

AMONG THE EQUIPMENT HOUSES

The Arkansas Drilling Co. has moved its offices from the Exchange National Bank Building, El Dorado, Ark., to 111 West Whaley Street, in Longview, Tex. Blaine Johnston and F. D. G. Parks will be at the Texas office.

The J. & M. Supply Co., Monroe, La., has appointed George Canterbury general representative in the East Texas Field. The company has announced its intention to open a branch office in Longview, Tex.

D. C. Morrow, of the Kirk-Morrow Iron Works Co., Tulsa, has returned after spending several weeks in the East Texas oil fields.

Alco Products, Inc., division of the American Locomotive Co., has announced the appointment of John H. Smith as chief engineer of the surface condensers department.

The Busch-Sulzer Brothers-Diesel Engine Co., St. Louis, Mo., is to build a new erecting shop, suitable for testing Diesel engines of large sizes up to 25,000 horsepower per engine, and an extension of the iron foundry with a 75-ton craneway.

J. F. Bradford, formerly general representative for the Kirk-Morrow Iron Works Co., of Iola, Kans. and Tulsa, has been placed in charge of the company's operations in the East Texas oil fields with headquarters at 200 North Third Street, Longview. Warehouse stocks of steel derricks, rig irons and drilling equipment are being maintained at Kilgore and Henderson, Tex.

The Link-Belt Co., Philadelphia, Pa., announces that Joe C. Tucker, Morganfield, Ky., has been appointed agent in his territory for Link-Belt portable loaders, such as the "Cub" portable belt conveyor and the "Grizzly" crawler loader.

The Lincoln Electric Co., Cleveland, Ohio, manufacturer of "Stable-Arc" welders and "Linc-Weld" motors, has moved its Chicago office to a new building at 1455 West Thirty-seventh Street from 53 West Jackson Boulevard. This provides additional space for sales, service and storage space.

Mat Berg, president of the Tractor Truck Equipment Co., Tulsa, announces that his company has been appointed distributor for the Chicago Pneumatic Tool Co.'s air compressors and equipment.

COMBINATION UNIT FOR MOUNTING ON "CATERPILLAR"

The Cardwell Allsteel DA-30 air-hoist combination unit, made by the Allsteel Products Manufacturing Co., Wichita, Kans., consists of the same frame and live-boom used in the Cardwell Allsteel Model PR-30 pipe-line winch; Davey air compressor and tank, and Little Giant 2½-ton air hoist. Elevation and angle of live-boom are hand-controlled from the operator's seat. The unit is designed for mounting on "Caterpillar" tractor, Model 30 wide-gauge.

The air hoist is instantly available to handle, load or unload pipe. The compressor supplies air pressure for operating brushes for cleaning pipe; to spray priming coat and for blow-torches used in making hot bends in larger sizes of pipe. The unit is so designed that it permits unhampered use of the drawbar, thereby making the tractor available for hauling distillate tank, or "dope wagon," and a sled or trailer to carry loose equipment used in bending, spraying or cleaning pipe.

IMPROVED ELECTRODE IS INTRODUCED BY LINCOLN

A new, improved electrode for the arc welding of stainless steel has been developed by the Lincoln Research Laboratories and is now in manufacture by the Lincoln Electric Co., Cleveland, Ohio. "Stainweld A," as it has been named, is an extruded electrode used with usual polarity of welding current reversed. The coating contains no carbon, often used as an arc stabilizer. This eliminates all possibility of the molten weld metal absorbing carbon from the electrode coating during the welding process. As a result of this feature the carbon content of weld metal deposited will always be equal to or less than the carbon content of the stainless steel being welded. This has an

important bearing upon the resistant qualities of the weld since a slight increase in carbon in the weld permits more rapid corrosion. Welds deposited by this electrode are produced in a "shielded arc" which prevents the combination of atmospheric oxygen and nitrogen with the molten weld metal to form oxides and nitrides in the weld.

Physical and chemical tests are said to prove the high tensile strength, ductility and resistance to corrosion claimed for welds produced with the new electrode. The accompanying picture shows a tension test sample with weld ground flush with the plate metal on one side only which broke in the plate at considerable distance from the weld under tension of 96,000 pounds per square inch. When the cross sectional area of the weld metal on another test coupon was reduced below that of the plate metal in order to obtain break in the weld it required pull of 96,800 pounds per square inch to break the weld. In addition to this physical characteristic the weld metal has a fine metal structure with no porosity. "Stainweld A" electrodes are manufactured in three-thirty-seconds inch, one-eighth inch, five-thirty-seconds inch, three-sixteenths inch, and one-quarter inch sizes of the regular 11-inch lengths.

HEADS NEW PUMP DIVISION

The Victor Equipment Co., formed through a merger of the Victor Welding Equipment Co. and the Kimball-Krogh Pump Co., has made George Pennington vice president and general manager of the pump division with headquarters in Los Angeles, Calif. Mr. Pennington graduated as a hydro-electric engineer at the Sheffield University, England, and has had 29 years of engineering experience in America, including installation of power plants, construction of submarines, dredge construction work, and installation of large steam turbines. He was master mechanic during the erection of the largest Pacific Coast cement plant and operated it for a year and he was superintendent for shops and marine installations for one of the large Pacific Coast ship building companies during the World War. Mr. Pennington's efforts will be devoted to the development and improvement of Kimball-Krogh irrigation, industrial, and mining pumps, etc.

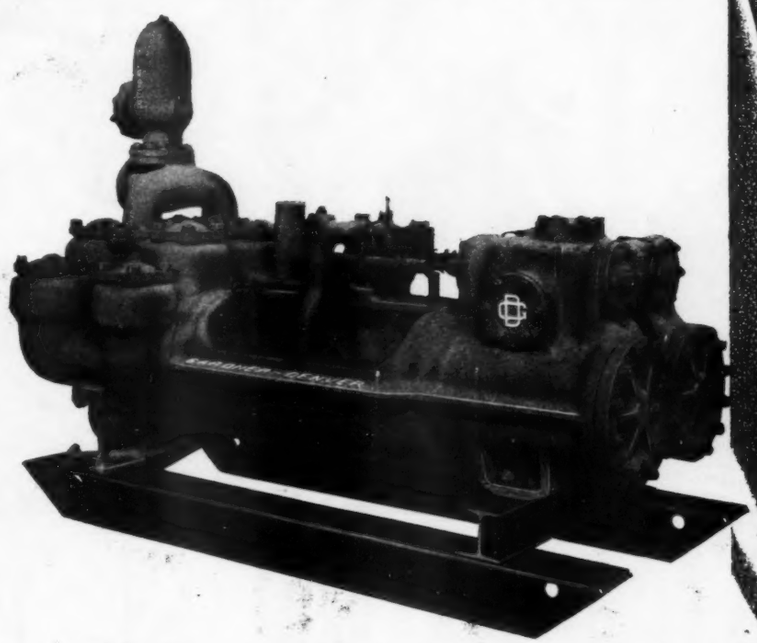
The Tulsite Chemical Products Co., Inc., whose factory is on the Sand Springs Road, Tulsa, is now in operation. The company manufactures chemicals, water treating and cleaning materials.

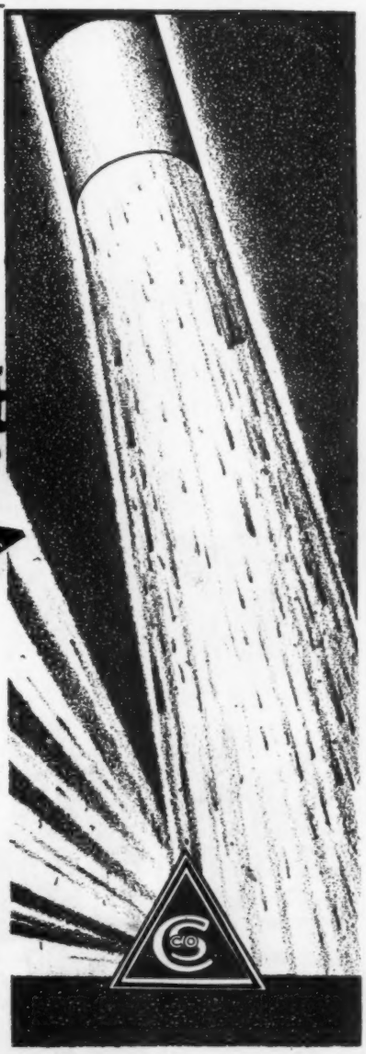
GARDNER-DENVER

14 x 7¼ x 16

STEAM PUMP

GIVES YOU VOLUME





1500 lb. guaranteed working pressure . . . Fast drilling . . . Low upkeep cost . . . Balanced piston valves . . . Divided fluid cylinders . . . . . .

"If Continental Sells It . . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

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COD-1

CONTINENTAL

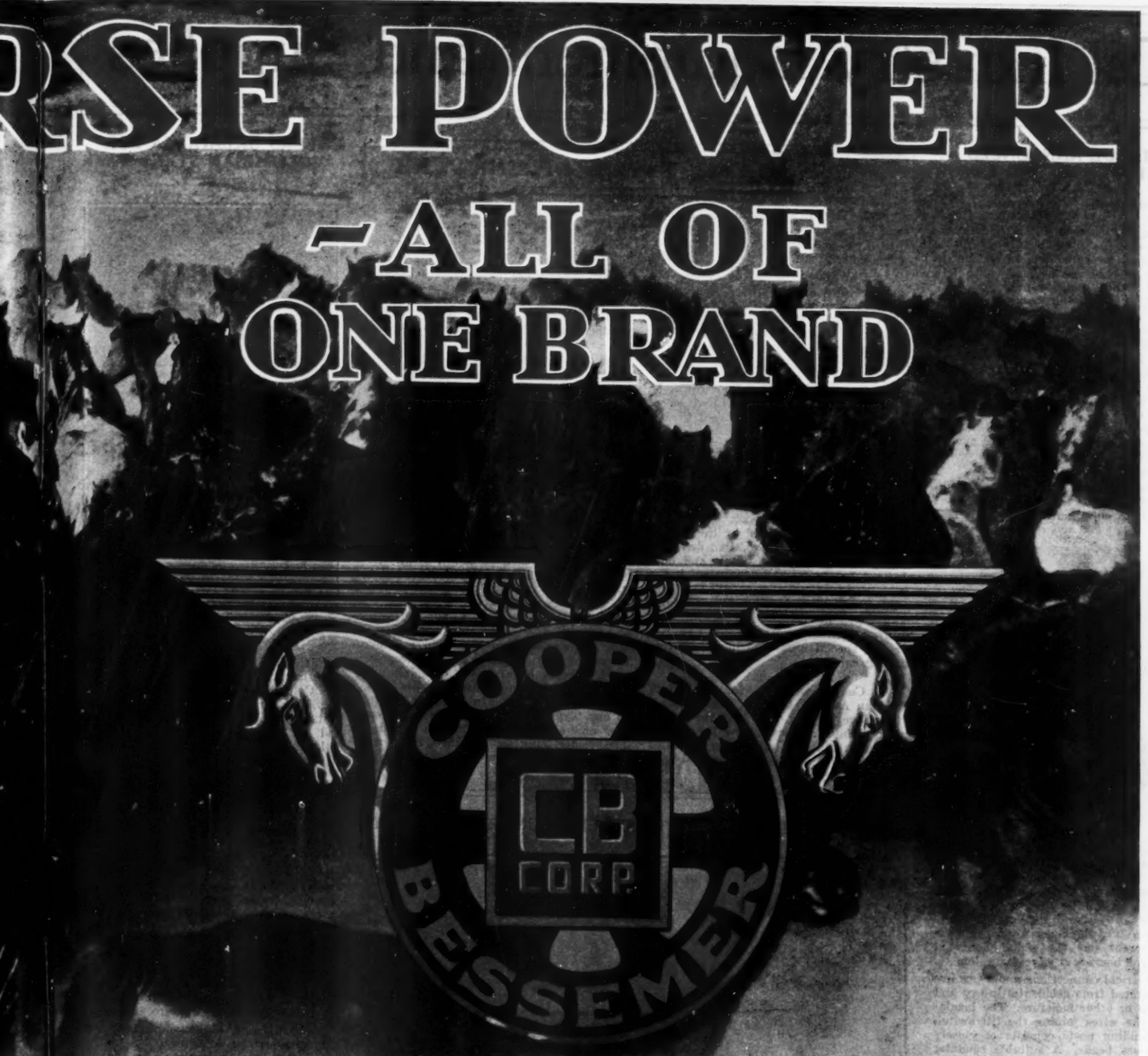
7000 HOR

Probably the largest number of engines in any compressor station in the world. Industrial Fuel Supply Co., Santa Fe Springs, Calif.

YOU'RE ALWAYS SAFE IN C

RSE POWER

-ALL OF ONE BRAND



7000 horsepower — 38 twin engines — all under one roof, and all built by the same company!

Here is a substantial expression of satisfaction and confidence. This compressor station, probably the largest in number of engines in the world, depends entirely upon the good performance of Cooper-Bessemer two and four cycle power units.

The men responsible for the profitable operation of this and other big stations over the country know the economy and durability of machines bearing the Cooper-Bessemer trade-mark.

THE COOPER-BESSEMER CORPORATION

MOUNT VERNON, OHIO — GROVE CITY, PENNSYLVANIA

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1313 Magnolia Building, Dallas, Texas
640 E. 61st Street, Los Angeles, California
Suite No. 301, 25 W. 43rd Street, New York, N. Y.

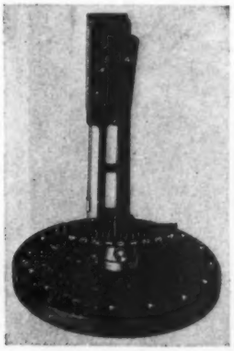
CHOOSING A COOPER-BESSEMER

Oil Industry Equipment and Supplies

TAGLIABUE ANNOUNCES NEW LEVEL INDICATOR

An improved level indicator is announced by the C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y., incorporates electric contacts for operating signal lights in the control house and, in as much as open contacts are barred in most oil plants, sealed mercury contacts are used. These contacts, however, must be kept at a certain distance from the flange face so as not to be affected or destroyed by high temperature at the flange. The tilt switch holding the mercury bottle is therefore pivoted on the end of a bracket so that it is more than a foot away from the flange. The movement of the float after being suitably reduced operates a rocker-arm on the spindle and the motion of the rocker arm is communicated to the mercury tilt switch by a long connecting link or rod.

This same motion also revolves a spindle which ends in the long red pointer, causing it to move across the scale. This



scale with white figures and graduations on a black background is graduated 0 to 4 inches up and 0 to 4 inches down. This indication can be read at a considerable distance and can be used to guide the operators in maintaining their proper level even if a breakdown of the electrical current put the signal lights in the control house out of commission.

All electrical connections and wires are well protected from accidental injury and from rain or other moisture. The insulation on the wires joining the tilt switch to the binding posts consists of closely strung glass beads. A suitable condulet opening is provided below the binding posts and the cover of the binding posts is furnished with a gasket between it and the bracket on which it is mounted. All pins, spindles and rods are generously dimensioned for long and continuous service.

The stuffing box at the flange end of the device is packed with high temperature resistant material. It is designed so that it cannot be made to bind. A normal accumulation of coke would not stop operation, for the controller is so designed that the float movement of 8 inches is so greatly reduced that tremendous power is developed in the leverage, sufficient to break up an ordinary coke formation.

An air pilot valve may be incorporated in the construction, making the device a combined indicator and level controller. The float, not shown in the photograph, the float arm and all levers and parts in contact with the oil are made of stainless steel.

Installation is made by means of the extra heavy steel flange furnished with the device which may be attached to a tee, thus forming a float chamber or mellon, or the flange may be directly attached to the wall of the tower, still or other apparatus.

NOTES ABOUT TRADE LITERATURE

Among helpful articles in the current issue of "The Vent," published by the Gilbert & Barker Manufacturing Co., Springfield, Mass., is one on "Electric Arc Welding," by George H. Gibb.

A new booklet on Sarco thermostatic steam traps for individual trapping systems is being distributed by the Sarco Co., Inc., 183 Madison Avenue, New York.

The Crescent Tool Co., Jamestown, N. Y., is sending out a descriptive sheet concerning its wrenches of forged Crestoloy steel.

A bulletin describing features of the latest Sauter time switch is being mailed by R. W. Cramer & Co., Inc., 67 Irving Place, New York.

Bulletin H-75, prepared by the Landis Machine Co., Waynesboro, Pa., describes the 1-inch and 1½-inch single and double-head Landmaco threading machine.

The Sullivan Machinery Co., Chicago, has issued bulletins telling about the new Sullivan railroad type portable compressor and special uses of Sringalite safety lighting cable.

The Consistometer Corp., 332 South Michigan Avenue, Chicago, has prepared a four-page bulletin describing the Stephens mechanical consistometer for testing and comparing the lubrication qualities of motor oils, aviation oils and transmission lubricants.

A new catalog, "Modern Copes Feed Water Regulation," is announced by the Northern Equipment Co., Erie, Pa.

The Caterpillar Tractor Co., Peoria, Ill., is sending out a bulletin on the Caterpillar 30 leaning-wheel grader, referred to by the company as the "smaller brother" of the 60 leaning-wheel grader.

The Driftmeter Junior, a device for measuring angular deflection of the well hole, is described and illustrated in a bulletin published by Driftmeter, Inc., 616 Exchange Bank Building, Tulsa.

"The Beco-Turner Baffle Wall" is the title of the first folder published by the Boiler Engineering Co., 24 Commerce St., Newark, N. J., since its affiliation with the Philbrico Jointless Firebrick Co. of Chicago.

A 12-page bulletin on Victor damper regulators has been published by the Atlas Valve Co., 282 South Street, Newark, N. J.

A plan to enable users to put 1931 efficiency into older models of Cooper-Bessemer gas engines is outlined in a folder issued by the builders. A replacement steel cylinder head, power cylinder, and gas economizer are included in the plan, which may be applied in whole or in part to any Type-8, Type-10, or Type-EC engine now equipped with 16-inch cylinder. The folder may be obtained from the Cooper-Bessemer Corp., Mount Vernon, Ohio.

BEAUMONT INCREASES ITS STEEL FOUNDRY CAPACITY

The Beaumont Iron Works Co., Beaumont, Tex., has completed installation of a 1½-ton per hour capacity Moore Rapid Lectromelt steel furnace, which materially increases its steel foundry capacity. While steel castings of almost any analysis may be manufactured, regular run is made to conform to S.A.E. 3,130 specifications. This grade of steel is used in manufacturing drilling bits, high pressure fittings, the clutches, sprockets and other parts for the manufacture of the Dreadnaught water-cooled drawworks; and with the addition of a high manganese content, is used in the manufacture of sheaves for Timken bearing traveling and straight line crown blocks. It is also used in the manufacture of other Dreadnaught drilling and production equipment.

COVERS OKLAHOMA FOR COLUMBIAN STEEL TANK

Earl Van Cleave

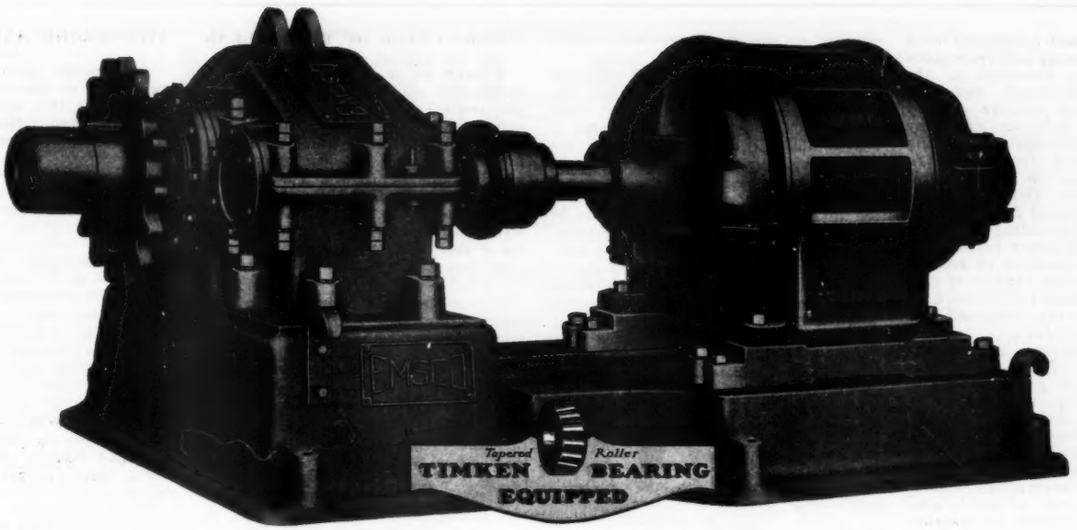
Earl Van Cleave, who was assistant sales manager, oil equipment division, for the Columbian Steel Tank Co., Kansas City, Mo., has been made direct representative of the company in Oklahoma and he has established headquarters in Tulsa.

ARMSTRONG INTRODUCING TRAP OF SIMPLE DESIGN

The new Armstrong compound trap, made by the Armstrong Machine Works, Three Rivers, Mich., has few moving parts, is simple in design and has high capacity for a given diameter of discharge orifice. All parts are easily accessible without disturbing the inlet or outlet connections. In the pilot trap there are only two moving parts, the inverted bucket and valve lever. In the pilot housing the only moving parts are the piston and main valve, which are integral and therefore operate in unison.

The body of the compound trap consists of standard Armstrong trap bodies bolted to a piston housing. In the No. 230 series, for pressures up to 250 pounds, the piston housing and bodies are made of close-grained semisteel of high tensile strength containing nickel and chromium. For high temperature, high pressure duty, the bodies are one-piece forgings, while the piston housing is machined from a solid steel billet. With this construction, after removing the receiving chamber body the piston valve seat can be unscrewed. It is then a simple matter to pull out the main valve and piston, as well as the piston liner.

No springs are used. With the vertical piston and liner, the main valve is closed by gravity. Excessive opening of the main valve is prevented by the combination of pressure relief port and partial closing of the main discharge port. Large water passages through the trap, and practically straight-line flow are said to give this trap high capacity in proportion to the main valve area. Oversize inlet and outlet connections are provided, so that the discharge orifice is the limiting factor of capacity instead of pipe friction. Copies of a booklet describing the new trap are supplied by the Armstrong company on request.



Timken Bearings are used on both shafts of the Emsco Heavy Duty Reduction Gear

The Emsco Derrick & Equipment Company has taken this safe, sure way to thwart the threats of friction, wear, radial-thrust loads and shock; to hold the gear shafts in rigid alignment and to guard the gears against injury under all service conditions.

Dependability is supplemented by large power and lubricant savings, long machine life and rock-bottom maintenance in all types of Timken Bearing Equipped oil field machinery. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN
Tapered
ROLLER BEARINGS

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

CARRYING CAPACITY OF BELTS

Is there any rule to guide one in determining what width of belt to use (with pulleys of corresponding width of course) when the load and the velocity are known? I cannot seem to find anything that deals with this subject exactly in any of my handbooks.—E. O. E.

The "Treatise on Leather Belting" by George B. Haven and George W. Swett, published by the American Belting Association, says concerning the question you ask:

"For small and relatively unimportant drives it is rarely necessary to employ the theory of belting in order to determine the necessary width of belt. Simple arithmetical rules can generally be used in such cases and will give a fairly good margin of safety in the use of the belt. Such rules generally embody simply the horsepower to be transmitted and the velocity of the belt. They are entitled 'Millwright's Rules' and may be stated as follows:

"1. A single leather belt traveling 800 feet per minute will transmit one horsepower per inch of width.

"2. A double leather belt traveling 500 feet per minute will transmit 1 horsepower per inch of width.

"These rules do not take into account the centrifugal force of the belt but merely consider a double belt 1.6 times as effective as a single belt. There is considerable latitude in the use of the terms 'single' and 'double' as applied to belting. However, the above rules are applied to the average single and double belt and give wide margins of safety in the transmissive power when the velocity of the belt is not over 4,000 feet per minute. At a speed of about 4,000 feet per minute the centrifugal effects due to the belt weight begin to manifest themselves in an important manner. Therefore for heavy transmissions and high speed belts the simple rules adduced above should be checked by a competent engineer or manufacturer.

"The following simple expressions will be found serviceable:

"For single belts:

$$\text{Belt width} = \frac{\text{Gross h.p.} \times 800}{\text{Belt velocity, ft. per min.}}$$

"For double belts:

$$\text{Belt width} = \frac{\text{Gross h.p.} \times 500}{\text{Belt velocity, ft. per min.}}$$

"To facilitate the calculation of belts by this method the accompanying table has been inserted in which are shown the carrying capacities of single and double belts at velocities ranging from 100 to 4,000 feet per minute at intervals of 100 feet per minute. Such a table is very useful in mill practice and enables the selection of the proper belt to be made by a matter of simple reference.

"When the belt speed in a given problem does not correspond exactly to any of the speeds given in the table above, the carrying capacity of the belt per inch of width may be calculated in a simple manner by interpolating arithmetically between the two values nearest to that of the given belt. Thus, if a belt was expected to run at 1,550 feet per minute, it would carry 1.94 horsepower per inch of width, if single, and 3.10 horsepower per inch of width, if double."

CARRYING CAPACITY OF SINGLE AND DOUBLE LEATHER BELTS AT VARIOUS BELT SPEEDS

	Millwright's Rules				
Belt speed, ft. per min.—	H.P. single belt per inch of width	H.P. double belt per inch of width	Belt speed ft. per min.	H.P. single belt per inch of width	H.P. double belt per inch of width
100	0.13	0.20	2,100	2.63	4.20
200	0.25	0.40	2,200	2.75	4.40
300	0.38	0.60	2,300	2.88	4.60
400	0.50	0.80	2,400	3.00	4.80
500	0.63	1.00	2,500	3.13	5.00
600	0.75	1.20	2,600	3.25	5.20
700	0.88	1.40	2,700	3.38	5.40
800	1.00	1.60	2,800	3.50	5.60
900	1.13	1.80	2,900	3.63	5.80
1,000	1.25	2.00	3,000	3.75	6.00
1,100	1.38	2.20	3,100	3.88	6.20
1,200	1.50	2.40	3,200	4.00	6.40
1,300	1.63	2.60	3,300	4.13	6.60
1,400	1.75	2.80	3,400	4.25	6.80
1,500	1.88	3.00	3,500	4.38	7.00
1,600	2.00	3.20	3,600	4.50	7.20
1,700	2.13	3.40	3,700	4.63	7.40
1,800	2.25	3.60	3,800	4.75	7.60
1,900	2.38	3.80	3,900	4.88	7.80
2,000	2.50	4.00	4,000	5.00	8.00

GETTING A.P.I. STANDARDS

Will you please tell me where I can get the latest information on American Petroleum Institute standards?—H.B.I.

You are referred to the American Petroleum Institute, Division of Production, 1508 Kirby Building, Dallas, Tex. From that office you can get copies of specifications of all standardized material as well as recommendations for use and care of equipment and other information of this general type.

SEEKS CAUSE OF TANK'S LEAK

I have set a wooden tank for hot water that contains a mixture of soda ash and other chemicals to prepare the water for use in a steam boiler. It is necessary to heat this water in the tank to a temperature of about 220° F. to get a thorough mixture. The tank has been leaking in the bottom chime and I am wondering if the chemicals in the water have any effect on the wood to cause this leak. With cold water the tank does not leak.—S. P. W.

It is assumed that this is an ordinary redwood tank set with flat hoops and probably open at the top. If this is the condition it would seem that the leak is probably caused by heat in the bottom of the tank expanding the flat hoops and in this way permitting the pressure due to the hydrostatic head of water in the tank to force the staves away from the bottom and permit the water to escape.

If the normal temperature of the water is 220° F. it seems logical to assume that it will be much hotter at the bottom and the heat will pass through the wood and heat the iron hoops, causing them to expand.

While wood has a relatively low coefficient of conductivity for heat it is a fact that it does conduct heat, and under conditions such as you have described it is probable that part of the heat introduced into the water to bring the temperature up to 220° F. is lost by escaping through the sides and bottom of the tank.

There is also a difference in rate of conductivity of heat between woods and if this tank is built with redwood staves and white pine bottom it is possible that there is some difference that might be noted in the expansion of these two woods. There is certainly a difference in the coefficient of expansion of wood and iron and the flat hoops would probably "stretch" enough to permit the bottom chime to open.

To remedy this condition it is suggested that heavy round hoops be used at the bottom of the tank and pulled up tightly, and kept in that condition by frequent attention.

It might help also to caulk the bottom chime of the tank with lead wool instead of oakum, although this is not considered as essential as the use of the heavy round hoops with turnbuckles near the bottom of the tank to reduce the expansion due to heat transmitted through the wood staves to the iron in the hoops.

WHY WAS IT CALLED THAT?

DUTCHMAN

In mechanics an odd piece inserted to fill an opening, hide a defect or strengthen a weak part, is called a dutchman. For instance, to avoid the necessity of cutting and relacing a new belt after it has begun to stretch it is cut about 6 inches short when first put into use and a dutchman—that is, a piece of belt of the required length, laced at both ends—is inserted between the ends of the belt. When the belt becomes loose through stretching, the dutchman is removed. The origin of the name is obscure, but it is supposed to have grown out of the practice of applying the word "Dutch" to things of false, temporary or unreal character, as in "Dutch courage," "Dutch treat," etc.

TWO-STROKE AND FOUR-STROKE

Gas engines often are referred to as two-stroke or four-stroke. Will you explain what this means? Do both the horizontal and vertical gas engines operate on the same principle?—O. D. E.

Horizontal and vertical gas engines operate on the same principle where they are of the same stroke cycle. The difference between the two-stroke cycle and four-stroke cycle engines lies in the principle of operation. These principles are explained as follows by D. H. Foster, lubrication engineer:

The four-stroke cycle principle of operation may be briefly described thus:

First, or charging stroke: Gas and air are drawn into the cylinder through the open inlet valve, by the piston moving away from the cylinder head, the exhaust valve being closed.

Second, or compression stroke: Both inlet and exhaust valves are closed, the piston moves toward the cylinder head compressing the mixed gas and air.

Third, or power stroke: Both inlet and exhaust valves are closed. The gas and air mixture is ignited causing an explosion which forces the piston away from the cylinder head.

Fourth, or exhaust stroke: The inlet valve is closed, the exhaust valve is open. The piston moving toward the cylinder head forces the burned gases out through the open exhaust valve.

This completes the cycle, there being three preparatory strokes and one power stroke, hence the expression "four stroke" cycle.

The two stroke cycle principle of operation may be described as follows:

1. As the piston moves toward the cylinder head the exhaust and inlet ports to the cylinder are closed and the gas and air mixture is drawn into the compression chamber. This stroke may be called the inlet stroke. While this charge is being drawn into the compression chamber, another charge is being compressed in the cylinder between the piston and cylinder head.

2. When the piston reaches the end of the stroke the gas and air mixture in the cylinder is ignited causing an explosion which forces the piston away from the cylinder head. As the piston travels away from the cylinder head the gas and air mixture in the compression chamber is compressed. When the end of the stroke is reached the exhaust and inlet ports are opened. The burned gases escape through the exhaust port and the compressed gas and air mixture from the compression chamber enters the cylinder.

This completes the cycle, there being one preparatory stroke and one power stroke.

WHAT ABOUT THE RED BEDS?

I know very little about the formations of East Texas, so I am calling on you for some information. Why do they not have any red beds or a red shale just before they reach the pay sand? Is the sand that produces the oil in East Texas Woodbine sand or something else? I am referring to Kilgore in Rusk County and Longview in Gregg County. They have a formation of red beds at Van, Tex., and they are sure that their pay sand is Woodbine, but at the other places mentioned they are missing the red beds. What sand then do they produce from?—A. R. L.

You will find your questions answered in detail in an article by Dr. W. C. Spooner, consulting geologist of Shreveport, La., published in The Oil and Gas Journal of March 26, 1931, "Rusk-Gregg Field 60 to 90 Square Miles." A geological column of the area is given in the article.

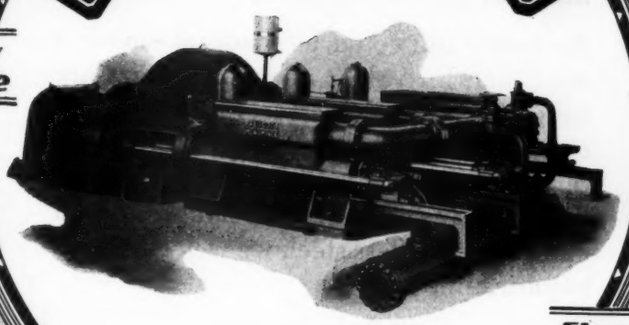
NORTH and SOUTH EAST and WEST

GASOLINE MOVES

via

PRESCOTT

Any Capacity
Any Pressure



Electric Motor, Diesel, or Gasoline Engine Drive

We take justifiable pride in the fact that SIXTY-SIX PRESCOTT GASOLINE PIPE LINE PUMPS have already been sold to major companies. These pumps range in capacity from 7000 to 32,500 barrels per day.

The Prescott Company

Menominee, Michigan — U. S. A.

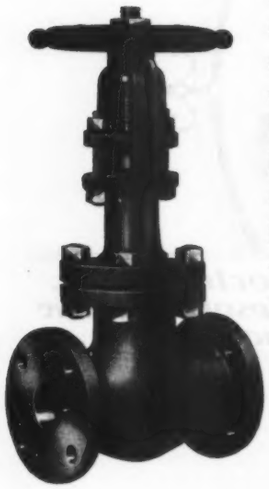
PRESCOTT·PUMPS·PREDOMINATE

OGJ 4-9 Gray

Stainless Steel

Vogt

Drop Forged Valves Fittings and Flanges



Only a few years ago stainless steel was unheard of, but today it is the all purpose metal and is rapidly gaining in popularity because of its great corrosion and rust resisting qualities.

No better use could be made of stainless steel than for valves and fittings that are subjected to the severest service where both corrosion and erosion are encountered. Since we are prepared to furnish a complete line of valves, fittings, and flanges forged entirely of stainless steel, we welcome your inquiries.

Write for further details

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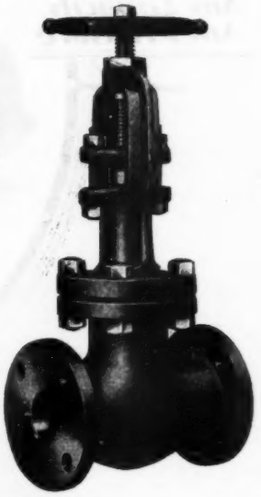
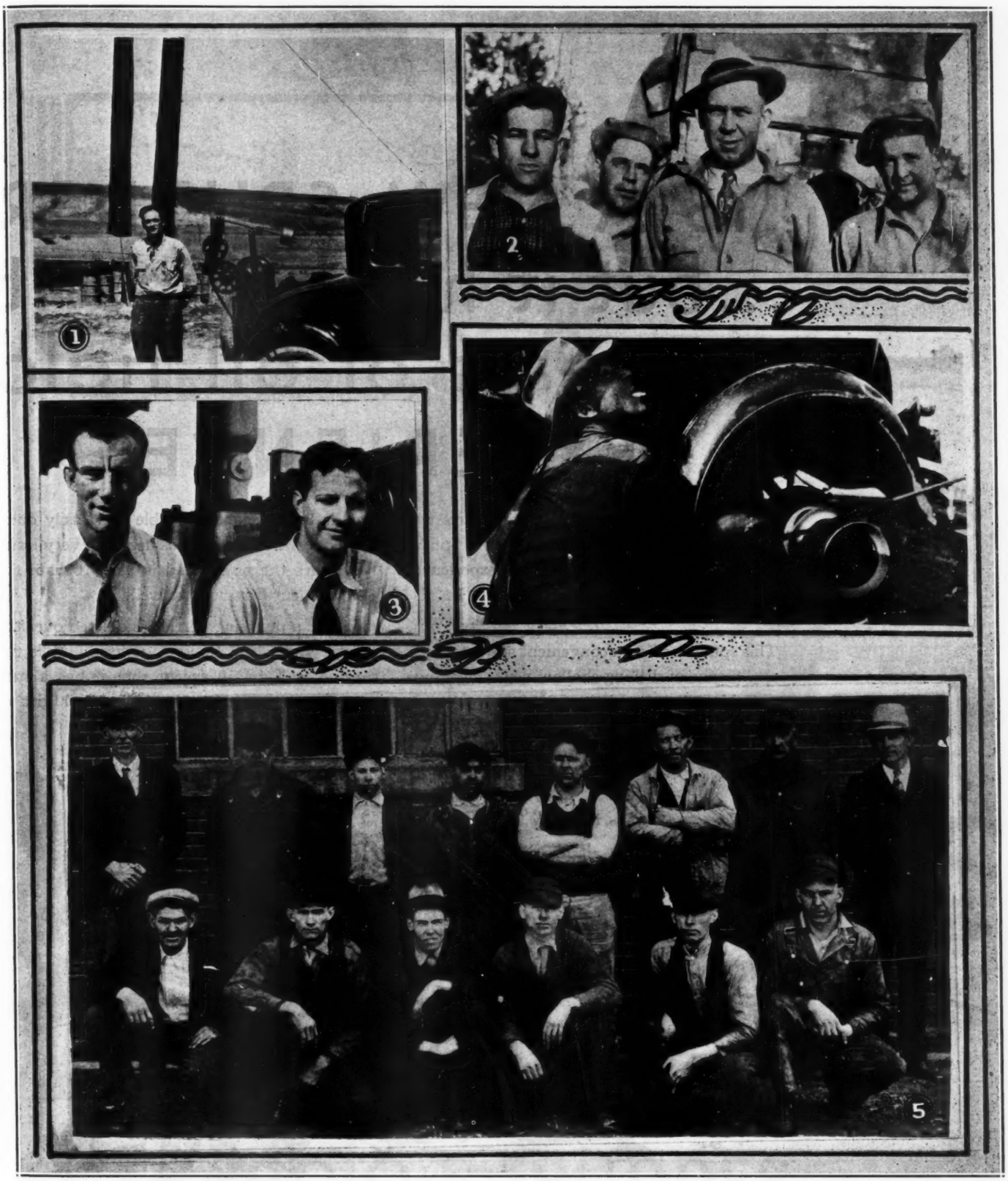
Manufacturers of:
Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.



Men You May Know, Snapped By Journal's Cameras



1—George N. McDaniel, district engineer, Gulf Production Company, Borger, Tex. 2—Homer Anderson, Dan Hawkins, Allen Bell and Fred Whitten, Halliburton Oil Well Cementing Company, Joiner Pool, East Central Texas. 3—R. W. Chapman and M. L. Williamson, Wilson Supply Company, Joinerville, Tex. 4—Homer Chapman, rig building contractor, Corsicana, Tex. 5—Operating force of Cabin Creek, W. Va., refinery machine shop, Pure Oil Company. Back row: S. J. Maroney, master mechanic; H. H. Hall, Worth Chappel, P. J. Massey, H. M. Hastings, Romer Estep, F. L. Smith and J. W. Walker, safety inspector. Front row: Lester Moore, Clarence Petry, Lawrence Maroney, Earl Allen, T. A. Maroney and G. W. Stephens.

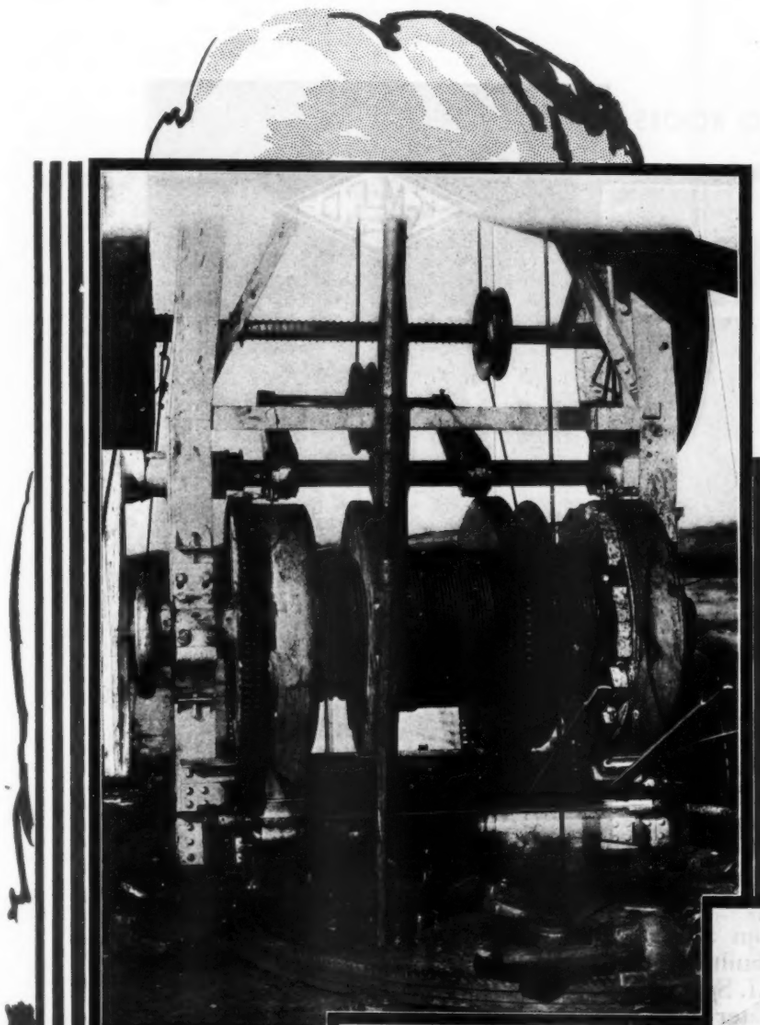
IT'S A NEW SPUDDER ...but it has behind it 24 years of oil field EXPERIENCE

The assurance with which we present the Moore Type 10 Champion Spudder is based on our many years of experience in manufacturing oil field equipment. In addition, it has been thoroughly field-proven.

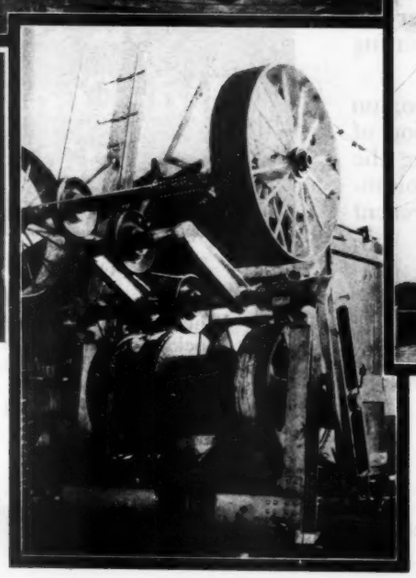
This spudder offers a convenient and inexpensive means of drilling shallow wells, cleaning out old wells to a depth of 2500 feet without the use of a derrick or standard rig front. It is light weight, portable and easily operated. A tractor, such as used on every lease, supplies the power and is used to haul the equipment from well to well.

Where a pumping derrick is erected over the well, Type 10-S Spudder is used. It is the same as Type 10 except that it has a stub frame to go under the bull wheel girt of the derrick.

LEE C. MOORE & COMPANY, Inc.
Established 1907
Pittsburgh · Tulsa
New York Offices: Oilfield Equipment Co., 30 Church Street, New York, N. Y.
Dallas, Tex. Wichita, Kan. Casper, Wyo. Shreveport, La. Houston, Tex.
Stocks in All Principal Fields



Front View—The convenient location of the operating levers gives the driller constant control of the Moore Spudder.

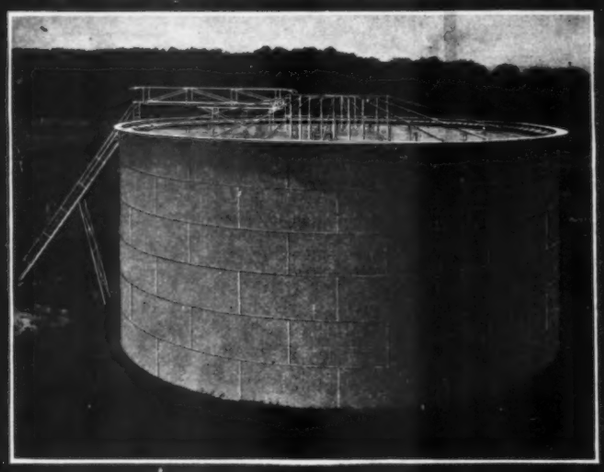


Above—*A complete unit. Quickly set up, and easily powered and transported by a standard tractor.*

Left—*Rear View—An efficient drilling motion, comparable to that of a standard rig, is produced by the crank and spudding arm shown here.*

Moore Champion SPUDDER

» » WITH COLUMBIAN FLOATING ROOFS



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KM CO offers steel tankage of from 500-barrel to 120,000-barrel capacity, built to KM CO Standard, customer's or A.P.I. Specifications, with cone, umbrella and water-top steel roofs, or with the Columbian Floating Roof.

The Columbian Floating Roof, by floating on the oil, leaves no space for the formation of combustible vapors, thereby eliminating the fire hazard and loss by evaporation. Columbian Roofs may be installed on your present tanks as well as new tankage.

If you are storing your oil . . . store it well!

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Largest fabricator and erector of STEEL TANKAGE located in the Mid-Continent Field

PRODUCTS

Steel Derricks, Rig Irons, Bull Wheels, Band Wheels, Crown Blocks, Combination Drilling and Pumping Unit, Tug Wheels, Sand Reels, Steel Tankage, Floating Roofs, Tank Fittings, Refinery Equipment, Semi-Steel Castings, Steel Plate Construction.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 42)

C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10 ..... Drlg. 1,380 ft.

RED RIVER PARISH

La. Oil & Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-12-11 ..... Spudded in; S.D. 50 ft.
Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 32-12-10 ..... T.A. 3,010 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.
Southern Carbon Co.'s No. 1 Rosengraut & Ducomb, 2,000 ft. E, 660 ft. S, NW cor., Sec. 24-17-5 ..... Set 12-in. 179 ft; drlg. 190 ft.
Southern Carbon Co.'s No. 2 Rosengraut & Ducomb, 1,980 ft. N, 660 ft. E, SW cor., Sec. 19-17-6 ..... Location.
Southern Carbon Co.'s No. 3 Rosengraut & Ducomb, 660 ft. S and E, NW cor., Sec. 30-17-6 ..... Location.
Southern Carbon Co.'s No. 1 C. M. Noble, 4,636 ft. N, 2,254 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6 .. Salt water; abd. 2,495 ft.
Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,525 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6 .. Location.
United Gas Public Service Corp.'s No. 3 Earle, NE cor., Sec. 25-17-5 ..... Set 9-in. 910 ft; drlg. 1,728 ft.
United Gas Public Service Corp.'s No. 4 Earle, SE cor., Sec. 1-16-5e ..... Drlg. 1,941 ft.

SABINE PARISH

Durham Oil Co.'s No. 1 Polly (was Davis et al's), NE cor. NE NE, Sec. 18-8-12 (was Stacy et al's) ..... Drlg. 2,550 ft.
Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 .. S.D. 105 ft.
Franks et al's No. 1 Hays, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ..... Dry and abd. 2,534 ft.
R. L. Gay tr.'s No. 1-A Long-Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... Set 12½-in. 105 ft.
John Henry O. & G. Co.'s No. 2 Cook Land Co., 330 ft. W, 1,980 ft. S, NE cor., Sec. 34-10-12 ..... Drlg. 1,900 ft.
Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ..... W.O.S.R; T.D. 2,620 ft.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... W.O.S.R. 2,800 ft.
Lide et al's No. 2 Ponder, 200 ft. S, 200 ft. E, NW cor. NE NW, Sec. 15-7-11 ..... Arranging to deepen 2,520 ft.
Jean Longoria's No. 1 Belton (no check), Sec. 31-9-13 .. S.D. 1,400 ft.
Packard O. & G. Co.'s No. 1 Smith (was Caddo-Sabine Synd.'s), Sec. 8-7-10 ..... Drlg. 2,600 ft.
H. W. Perritt's No. 4 Bowman-Hicks, SE cor. SE NE, Sec. 2-7-12 ..... Location.
H. W. Perritt's No. 1 Boring, NW cor. NW NW, Sec. 11-7-12 ..... Rigging up.
A. H. Thames' No. 1 Edward est., 150 ft. NW of SE cor. NE SE, Sec. 8-8-13 ..... Rigging up.
Trans-America Oil Corp.'s (was Southland Oil Co.'s), No. 1 Carter, 1,030 ft. W, 345 ft. N, SE cor. SE NE, Sec. 36-8-12 ..... W.O; T.D. 2,540 ft.
John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-13 ..... Cmtd. 6⅝-in. csg. 2,310 ft.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ..... Arranging to drill 905 ft.
A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Drlg. 3,430 ft.

UNION PARISH

Fred A. Green's No. 1 U. S. Govt., 660 ft. N, 1,980 ft. W, SE cor. NE, Sec. 26-20-3e ..... Rigging up.
Nemours Corp.'s No. 1 Pace-Hamby, 660 ft. NE of SW cor., Sec. 35-22-3e ..... Location.
Nemours Corp.'s No. 1 Stranger, 957 ft. N, 2,180 ft. E, SW cor. NW, Sec. 14-21-3e ..... Set 6-in. 2,073 ft; estimated 750,000 ft. gas 2,120 ft.

VERNON PARISH

Weir & Smith's No. 1 Delta Land Co., Sec. 14-2-11, 200 ft. S and W of NE cor. section ..... Set 10-in. 525 ft; drlg. 650 ft.

WEBSTER PARISH

Coyle tr.'s No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.
Red Hawk Oil Co.'s No. 1 Mathews, 330 ft. N, 330 ft. E, C, Sec. 11-23-9 ..... S.D. 2,518 ft.

ARKANSAS

CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-18-3 ..... T.A. 2,925 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-3 ..... S.D; clearing titles 1,214 ft.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

DALLAS COUNTY

E. C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13 ..... Coring sand and shale 2,748 ft.
J. H. James tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. NW NE, Sec. 11-9-15 ..... Drlg. black gumbo 2,398 ft.

GARLAND COUNTY

(Cable tools)

Givins et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19 ..... 1,300 ft. 5 3/16-in. in hole; T.A. 3,756 ft.

GRANT COUNTY

Spann & McClung's No. 1 Sarah Page, 660 ft. W, 660 ft. S, NE cor. NW, Sec. 3-3-12 ..... S.D. 466 ft.

HOT SPRINGS COUNTY

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ... S.D; W.O. 220 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hattie, NW cor. NE, Sec. 1-20-6 .... S.D. for fuel 2,345 ft.
Smitherman & McDonald's No. 1 Reed, 200 ft. N, 200 ft. W, SE cor. NW NW, Sec. 16-15-22 ..... Setting 6⅝-in. packer 1,198 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-29 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D; W.O. 3,570 ft.

MADISON COUNTY

(Cable tools)

J. W. Baxter's No. 2 Hallin, C, Sec. 17-16-25 ..... T.A. 405 ft.
J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26 ..... T.A. 42 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ... T.A; abd. 2,813 ft.
East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 3-15-26 ..... T.A. 910 ft.
E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ..... T.A. 2,968 ft.
Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 33-15-26 ..... T.A. 93 ft.
Gusher Bend Oil Co.'s No. 1 Adams, 120 ft. S, 800 ft. W, NE cor. NW, Sec. 26-14-26 ..... Coring 2,635 ft.
Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16 ..... Abd. 4,700 ft.
Lenz et al's No. 3 Johnson, 250 ft. W, 150 ft. N, SE cor. NE NW, Sec. 24-15-26 ..... Dry and abd. 2,850 ft.
J. D. McRae's No. 1 Smith, 150 ft. N, 150 ft. W, SE cor., Sec. 28-15-26 ..... Derrick.
Salzer & McRae's No. 1 Rose, SW cor. NE SW, Sec. 9-16-26 ..... Abd. 475 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 ..... S.D. 2,907 ft.

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The OIL and GAS JOURNAL
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Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... Recmtd. 6-in. 2,185 ft; T.D. 2,190 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... Drlg. lime rock 2,555 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 Baird, 760 ft. S, 660 ft. E, NW cor., Sec. 11-7-20 ..... Arranging to run 8-in. csg. 2,700 ft.
Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ..... U.R. 5 3/16-in. 4,145 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D. 1,536 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D; W.O. 1,475 ft.

SEBASTIAN COUNTY

Ozark Natural Gas Co.'s No. 1 A. B. Bryant, C SE NE, Sec. 28-8-30 ..... Began drlg. Mar. 20; drlg. 279 ft.

UNION COUNTY

Chapman & Wilson's No. 1 A. H. Hadley, 330 ft. N, 330 ft. E, SW cor. NE SW, Sec. 3-18-13 ..... 600 ft. fluid 30% S.W. in hole; T.A. 3,570 ft.
S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... S.D. 3,328 ft; arranging to plug back to Natchitoches sand.

VAN BUREN COUNTY

Glenn Kohle et al's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... T.A. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D; W.O. 602 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Fishing for bit 1,780 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29 ..... S.D. 1,700 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Devore & Midfield's No. 1 Roy B. Cooper, 200 ft. S, 200 ft. W of NE cor. R. B. Cooper 115-ac. tr., Wm. Ward Sur. ..... Drlg. rock 865 ft.
Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E. SE cor. G. W. Hardidge 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. ..... Drlg. 1,260 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W of SW cor. J. H. Dyer Sur. ..... Derrick.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... Drlg. shale 2,050 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur. ..... S.D. 3,600 ft.

CASS COUNTY

E. K. Atkinson's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... Derrick.
Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 88-ac. tr., Albert H. Latimer Sur. ..... Derrick.
Sam B. Hunter's No. 1 Marshall Felker, 1,800 ft. E, 160 ft. N, SW cor. 66-ac. tr., Jno. L. Chambers Sur., landowner shows Jenkins on map ..... Drlg. 2,311 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... Drlg. 2,960 ft.
Olds & Smith's No. 1 Athey, 3,056 ft. W-E line, 856 ft. S-N line, J. C. Byers Sur. ..... S.D. 1,600 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ..... S.D. 2,275 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.
J. E. Smitherman's No. 1 Bell, 385 varas S, 108 varas W, NE cor. J. E. Ferrall Sur. ..... Dry and abd. 3,783 ft.

HARRISON COUNTY

Corona Pet. Co.'s No. 1 A. J. Bohler, C, Bohler 140 ac. in SW cor. S. F. Sparks Sur. ..... Will resume drlg. 2,020 ft.
Crump & Hannegan's No. 1 Dunn, Betty Humphreys Sur. ..... S.D. 3,560 ft; W.O.
Elmore & Bonner's No. 1 J. C. Lowery, in center of J. C. Lowery 81-ac. tr., W. W. O. Stanfield Sur. ..... Derrick.
W. M. Hobson tr.'s No. 1 P. P. Taylor, Hy Vardaman Sur. ..... T.A. 3,540 ft.
Geo. L. Pace et al's No. 1 T. G. and Eugene Barker, 710 ft. N of S line, 1,930 ft. W of E line, SE cor. 230-ac. tr., Victor Pedraso Sur. ..... Rig up.
O. H. Parkening's No. 1 T. J. Taylor, C, Blk. 32, W. H. Payne Sur. ..... Rigging up.
O. H. Parkening's No. 2 T. J. Taylor, C, J. C. Hawley Sur. ..... Derrick.
W. G. Ray Drlg. Co.'s No. 1 F. C. Hall, D. Davis Sur. ..... Drlg. 3,530 ft.
Rowe-Nichlos' No. 1 Pitts, E. A. Merchant Sur. ..... Location.
Ryan Consolidated Pet. Corp.'s No. 1 Dr. H. H. Key, 1,500 varas N of SE line, 500 varas E of SW line, of E. Carroll Sur. ..... Location.
Seigal Bros. and Kelinson's No. 1 Taylor (no check), F. O'Niel Sur. ..... Derrick.
Sinclair O. & G. Co.'s No. 1 Cora L. Davenport, Jno. B. Morton Sur. ..... Coring 3,650 ft; blue shale.

MARION COUNTY

Eden Oil Co.'s No. 1 J. M. DeWare est., 150 ft. S, 1,507 ft. E, NW cor., S. R. Hazelwood Sur. ..... Began drlg. Mar. 21; set 10-in. 400 ft.
Geo. Hindman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. repairs 400 ft.
Hindeman & Rhondo's No. 1 McGaughey, 1,547 ft. W, most northerly SW cor., 1,638 ft. N most northerly S line, W. J. Willis Sur. ..... S.D. 2,300 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... S.D. 1,884 ft.
Shasta Oil Co.'s No. 1 B. E. Johnson, approximately 1,500 varas E and 500 varas S of SE cor. E. S. T. Greer Sur. in Wm. Mason Sur. ..... Cored sand 2,250 ft; no show; S. D; W.O.
Sinclair O. & G. Co.'s No. 1 Wright, Jacob Grover Sur. ..... Fishing bit and drill collar 2,980 ft.
Sinclair Oil & Gas Co.'s No. 1 D. R. Coulter, W. Russell Sur. ..... Began drlg. Mar. 20; set 12½-in. 200 ft.

PANOLA COUNTY

Everette Drlg. Co.'s No. 1 E. L. McDaniels, 200 ft. S, 200 ft. W, NE cor. McDaniels' 116 ac., Alanson Barr Sur. ..... Abd. at 500 ft; skidded 100 ft. south; rig up.
The Texas Co.'s No. 2 G. W. Brumble, 400 ft. S, 200 ft. E, NW cor., Jno. Womack Sur. ..... Drlg. shale 2,190 ft.

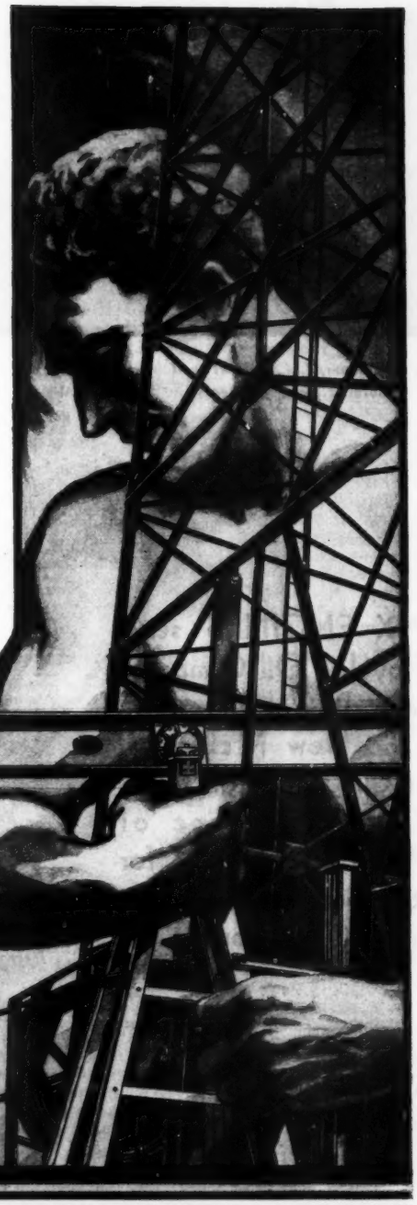
RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. ..... S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ..... S.D. 2,280 ft.

SHELBY COUNTY

I. M. Bradley's No. 1 Ashberry (no check), G. W. Mitchell Sur. ..... Derrick.
E. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright) ..... Set 10-in. 240 ft; drlg. 900 ft.
Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..... S.D. 3,111 ft.
Sloan Prospecting Co.'s No. 1 Sanford, approximately 300 ft. N and 200 ft. E, SW cor. B. Sanford 49-ac. tr. in M. M. Vann Sur. ..... Rigging up.
Sloan Prospecting Co.'s No. 1 Windham, H. English H.R.S. ..... Rigging up.

RIGIDITY



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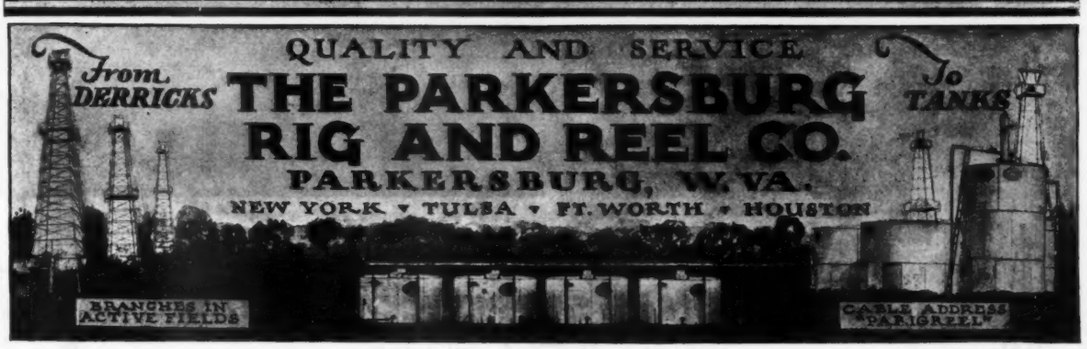
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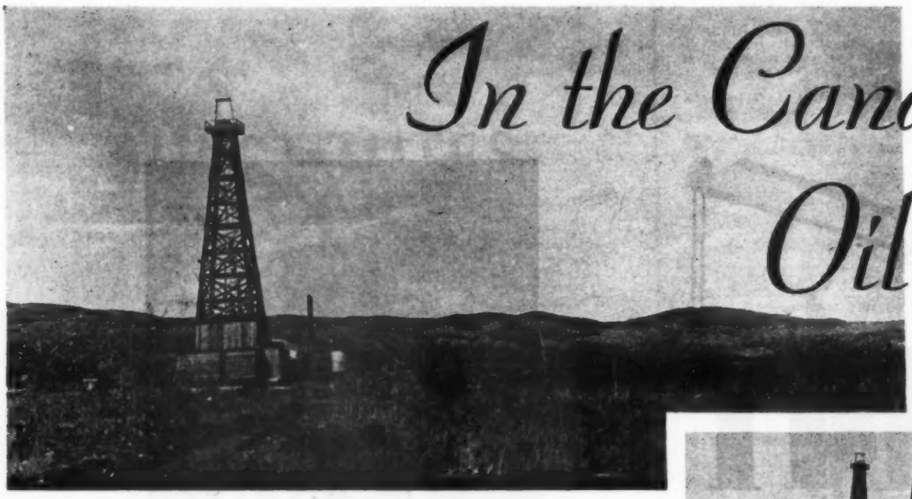
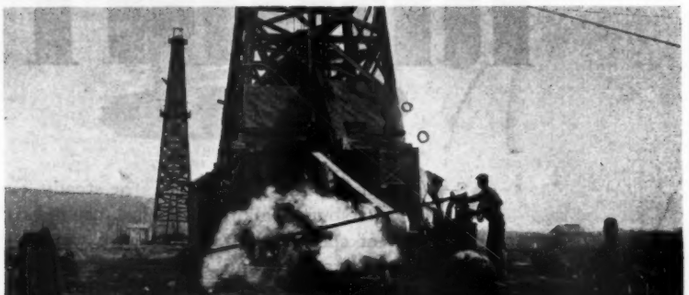
In the Canadian Oil Fields . . .



Herron Petroleum, Ltd., wildcat well in the Foothills west of Calgary.

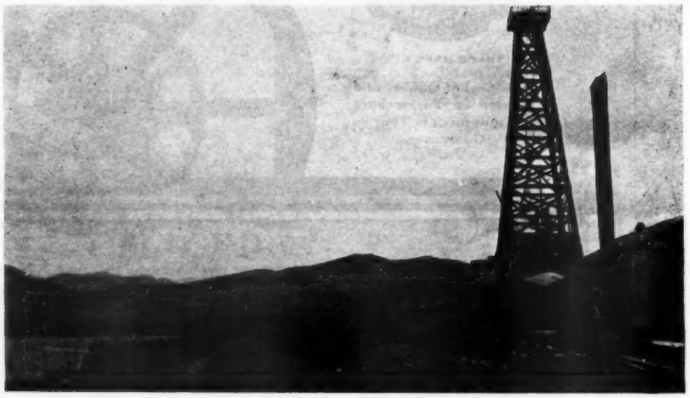


Skidding a rig in Turner Valley by the New McDougal Segur Oil Co., Ltd.

AJAX ENGINES serve the Royalite Oil Company, Herron Petroleum, Ltd., and the New McDougal Segur Oil Co., Ltd. Here, again, is evidence of AJAX dependability for most important operations throughout the world.

Wildcat well on the Herron structure.

Ask the National Supply Man for details of these operations.



Another wildcat on the Herron structure 40 mi. west of Calgary.

ROCKY MOUNTAIN AREA

(Continued from Page 48)

Dome, which is drawing near the sands in the Dakota series, is drilling at 5,745 feet in sticky shale. Progress has been delayed by cavey ground which has given considerable trouble. The discovery of oil in the Lakota sand in the Big Muddy, to the southeast of the Midway Dome, has served to renew interest in this test which had a small production in the second Wall Creek.

Washakie County

The Ohio Oil Co.'s No. 1 Strothers, SW SE NW, Section 19-45-92, Neiber Dome, the deep test which is starting with the intentions of going 7,000 to 8,000 feet, if necessary, is standing with 15½-inch cemented at 782 feet while additional water wells are being drilled.

Big Horn County

The Ohio Oil Co.'s No. 1 Smith, Lot 61, Section 33-56-97, Garland Dome, is straightening a crooked hole at 1,274 feet.

Fremont County

Producers & Refiners Corp.'s No. 10, SE NW SW, Section 14-32-95, Big Sand Draw, is bottomed at 4,915 feet and fishing for core head. This is the deep test which succeeded in getting through the heavy gas pressure in the upper Frontier sands. The same company's No. 1, Section 33-34-92, Muskrat Dome, which has been shut down for the winter at 4,951 feet, is standing. While idle, a water well was drilled nearby and has been completed at 605 feet. It produced 985 bbls. of water in the first 24 hours. The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is bottomed at 4,485 feet and cleaning out. The 6⅝-inch is at 4,409 feet.

Weston County

The Osage Field, which has been comparatively quiet during the winter, is expected to show an increased activity during April. Last fall, due to the low price of crude, some of the principal operators began shutting down their wells on top of the sand rather than drill in and market the oil at the reduced prices. The operators in the Osage Field have an organization called the Oil and Gas Producers Association which has done some effective work. It was reported recently to have established a field price of $1.50 for crude, the members agreeing no oil will be sold below that price. The posted field price is 85 cents, but most of the oil is moved under contract to local refineries and the posted price does not really govern the situation. Prior to this agreement the Osage Trust Co. was reported to have contracted 100,000 bbls. to Montana refineries at a price considerably above the posted quotation.

The Decker Oil Co.'s No. 1, NW NE NE, Section 1-45-64, Osage district, was completed for 72 bbls. at around 2,000 feet. Le Faivre Oil Syndicate's No. 1 Martin, NW SE, Section 29-45-68, Martin Dome, is preparing to run and cement casing at 1,000 feet. The hole started in the Pierre shale.

Crook County

W. F. Clark and others' No. 1, Section 29-49-66, Wakefield Field, is in the second Wall Creek at 1,022 feet and is estimated at 7 bbls. per day. It will be drilled deeper.

Sublet County

Thomas B. Jefferson's No. 1, Section 11-28-113, Dry Piney, is reported to have encountered a sand at 1,825 feet which made 15,000,000 feet of gas. This well is half a mile from a test drilled to 4,000,000 feet by the Midwest Refining Co. several years ago. It had good shows of gas and some oil, but was not commercial. A number of wells have been drilled in that area, mostly to shallow depths, in recent years. There are several thin sands which show saturation, but no wells sufficiently large to interest the major companies have been completed. Senrab Oil Co.'s No. 1 McGinnis, NE cor., Section 28-26-113, 3 miles south of the La Barge Field, is reported to have a show of oil in water at 1,550 feet. This operation was started in 1927 by the Wyoming-La Barge Oil Co. and drilled to 1,550 feet with a diamond drill at which depth it has been standing. An attempt will be made to shut off the water and test the showing. Joseph Minton and others' No. 1 State, will be deepened from 1,680 feet to which depth it was drilled 8 or 10 years ago by the Green River Petroleum Co. It is on the section adjoining Section 17 upon which the Circle Oil Co. recently brought in a well which averaged 40 bbls. a day before being shut in on account of storage tanks being full. The Minton well will be deepened to the horizon in which the Circle well found the pay, expected within 150 feet. The Ogden-La Barge Oil Co.'s No. 1, Lot 2, Section 18-27-118, has resumed at 6,200 feet after being shut down during the winter.

UTAH

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23-21, Salt Valley, is drilling and coring in salt at 1,335 feet. Utah-Pennsylvania Oil Co.'s No. 1, NW NW, Section 3-10n-4w, Penrose district, Box Elder County, is drilling at 3,750 feet in a dry hole, and Price River Petroleum Co.'s No. 1, SW NE, Section 16-14n-10e, Carbon County, is shut down at 3,300 feet with the tools in the hole. Mid-American Oil Co.'s No. 1, Bloomington Dome, SE NW, Section 17-43-15, Washington County, is drilling at 2,300 feet, and Arrowhead Petroleum Corp.'s No. 1 Punchbowl, SW NE, Section 1-43-15, is drilling below 900 feet.

MONTANA

Carbon County

The Ohio Oil Co.'s No. 2 Northern Pacific, NE NW SE, Section 11-7s-21, Dry Creek Dome, the discovery well in the Dakota sands, responded favorably to cleaning out and drilling 6 feet deeper by a 100 per cent increase in production. The well was completed in the Lakota sand at 5,505-10 feet last September. It flowed originally at the rate of 2,300 bbls. daily, but decreased rapidly. It was making around 600 bbls. daily when cleaning out and deepening began and it responded with an increase to 1,200 bbls. daily. The oil is unusually high grade, testing 52 degrees on the Baume scale. The production is being shipped to the Utah Oil Refining Co. at Salt Lake City.

The Ohio Oil Co.'s No. 1 Montana Industrial, SE SW NE, Section 11-7-21, is coring at 4,305 feet in the second Frontier sand and showing considerable gas. It will lubricate and continue to the Dakota sands expected at 5,400 feet. Same company's No. 1 Souders, C SW SW, Section 2-7-21, is shut down at 1,340 feet after changing over to rotary and is waiting for crew. The operation recently taken over by J. D. Cook, Mark U. Weber, Charles E. Orchard and associates, will hereafter be known as Cook, Orchard and others' No. 1 Armstrong, SW cor. NW, Section 7-7s-21. It has commenced drilling and at last reports was down 160 feet. Rotary rig from Oregon Basin was set up recently over the new location. Spomont Oil Co.'s No. 1 Cruse, SE, Section 32-6s-18, Roscoe district, is spudding.

Liberty County

Western Natural Gas Co.'s No. 1 Poindexter, C SE SE, Section 17-37-4e, Whitlash district, is reported dry and abandoned at a total depth of 2,233 feet. It had a little gas in the Colorado at 1,490 and 1,645 feet. An operation not heretofore reported is Northland Oil & Gas Co.'s No. 1 Yurman, C SE SW, Section 32-33-5e, which is drilling at 3,475 feet. It cut the Ellis sand at 2,700-20 feet.

Hill County

Jones & Perkins' No. 1 Perkins, SW SE SW, Section 34-33-12e, Kremlin district, has rig up. Jones, Rice & Perkins' No. 1 Dull, NE cor., Section 4-32-12, recently reported a completion as a gas well, has been abandoned at 1,125 feet, the gas having been drowned out.

Toole County

Nepstad-Vander-Pas' No. 1 Hoyt, C NE NW, Section 14-32-2w, Kevin-Sunburst Field, is drilling at 500 feet. Ashalta Oil Co.'s No. 1 Volbrecht, NE cor. SE, Section 11-37-4w, Border Field, was dry and abandoned at 2,690 feet. It cut the Vanalt sand at 2,545-57 feet, the Sunburst at 2,445-57 and the Cosmos at 2,675-85 feet.

Rosebud County

Prairie Oil & Gas Co.'s No. 1-X, Contract 3, NE SW NW, Section 26-10n-39, Porcupine Dome, is bottomed at 2,415 feet at which depth 12½-inch was cemented. It was drilled out to 1,460 feet and shut down to repair motor. A number of tests have been drilled in recent years on this dome, one of the largest in Montana, but none succeeded in getting through a big water sand at around 2,400 feet. This well appears to be making progress in overcoming the heavy pressure. It is reported that 1,000 sacks were used in cementing.

Choteau County

Williston-Shelby Oil & Gas Co.'s No. 1 Flack, NE cor. SE, Section 12-28-11e, Big Sandy, is reported abandoned at 2,880 feet at which depth water flowed over the top.

Rocky Mountain Production

Average daily runs from fields week ended April 4:

WYOMING	
Salt Creek	25,770
Big Muddy	2,190
Byron	10
Dallas-Derby	750
Dutton Creek	100
Elk Basin	700
Ferris	40
Frannie	900
Grass Creek	3,000
Hudson	190
LaBarge	2,010
Lance Creek	240
Lost Soldier	2,740
Lovell	10
Oregon Basin	1,320
Osage	1,180
Rock River	1,990
Poison Spider	270
South Casper	220
Teapot	30
Total Wyoming	42,660
MONTANA	
Buckley-Border	760
Cat Creek	1,070
Dry Creek	820
Kevin-Sunburst	4,450
Lake Basin	50
Pondera	1,540
Total Montana	8,690
COLORADO	
Florence	390
Fort Collins	950
Iles	1,100
Orchard	350
Moffat	970
Rangely	50
Tow Creek	360
Total Colorado	4,170
NEW MEXICO	
Rattlesnake	1,015
Hogback	450
Table Mesa	84
Artesia	182
Cap Rock	137
Getty	177
Hobbs	33,263
Jal	1,071
Lea	2,669
Eunice	2,121
Texas Pacific area	238
Total New Mexico	41,407
Total Rocky Mountain	96,927
Total previous week	94,976
Difference	1,951

NORTH AND WEST TEXAS

(Continued from Page 54)

330-67 feet, initial production 21 bbls., total depth 1,437 feet.

Reagan County

Big Lake Oil Co.'s No. 179 University, dry and abandoned, total depth 4,003 feet.

Tom Green County

Cosden Oil Co.'s No. 1 Anson, location abandoned.

Winkler County

Magnolia Petroleum Co.'s No. 1 Walton, top pay 3,140 feet, initial production 55 bbls. per day, total depth 3,155 feet.

Jones County

Yingling and others' No. 1 Williams, oil sand 2,537-39 feet, 2,540-43 feet, initial production 175 bbls., total depth 2,543 feet.

TOTAL RECOVERY AND DAILY AVERAGE BY POOLS FOR WEST TEXAS, MARCH, 1931

Pool and county—	Daily average	Recovery
Ogden, Andrews	59	1,829
Church-Fields and McElroy, Crane	19,414	601,834
Sand Hills, Crane	.....	.....
Waddell, Crane	31	961
World, Crockett	1,651	51,181
Penn, Ector	5,748	178,188
Cowden (North), Ector	35	1,085
Settles, Roberts and Chalk Field, Howard-Glasscock	22,929	710,799
Stephens, Fisher	747	23,033
Boren, Garza	26	806
Tankersley, Irion	68	2,108
Wheat, Loving	3,686	114,266
Westbrook, Mitchell	1,922	59,582
Yates, Pecos	91,827	2,846,637
Taylor - Link - University, Pecos	1,767	54,777
Masterson, Pecos	15	465
Pecos Valley, Pecos	200	6,200
Big Lake, Reagan	27,316	846,786
Skelly-Grayson, Reagan	.....	.....
McMillan, Runnels	92	2,852
McCamey, Crane-Upton	5,496	170,376
O'Brien, Ward	2,568	79,608
Shipley-Bennett, Ward	853	26,443
Hendricks and Leck, Winkler	46,772	1,449,932
Llano-Scarborough, Winkler	1,934	59,954
Noodle Creek, Jones	1,301	40,331
Dunnigan, Taylor	135	4,185
Ira, Scurry	5	155
Total	236,593	7,334,373

RUNS THROUGH TRUNK LINES

Company, size and location—	Bbls.
Atlantic, 10-inch, Houston	27,847
Gulf, 10-inch, Ranger	8,481
Humble, 2 and 8-inch, San Angelo	33,033
Humble, 10 and 12-inch, Comyn	32,270
Illinois, 2 and 8-inch, Del Rio	36,395
Magnolia, 8-inch, De Leon	18,518
Pasotex, 8-inch, El Paso	11,310
Shell, 10-inch, Healdton	28,748
Shell, 10-inch, Houston	28,363
Texas, 12-inch, Houston	22,743
Total	247,708

RUNS TO WEST TEXAS REFINERIES

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	8,056
Burford Ref. Co., Pecos	4,401
Cosden Ref. Co., Big Spring	1,465
Col-Tex Ref. Co., Colorado	7,342
Greatwestern Ref. Co., Big Spring	491
Wickett Ref. Co., Wickett	324
Total	22,079

TANK CAR SHIPMENTS

Big Lake from Texon	3,000
Southern C. O. Pur. Co. from Wickett	11,199
American Ref. Co. from Pyote	748
Total	14,947

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

Dr. C. W. Wallace's No. 1 Kemp & Kempner, temporarily abandoned, total depth 1,800 feet. Cumley & Son's No. 1 Turberville, temporarily abandoned, location. F. P. Hynes' No. 12 Richardson "B," dry and abandoned, total depth 1,205 feet. George L. Pace's No. 1 Knight and others, dry and abandoned, total depth 1,350 feet. Petroleum Producers Co. and others' No. 1 Richardson, dry and abandoned, total depth 1,267 feet.

Cooke County

Danciger Oil & Refining Co.'s No. 3 Truebenbach, dry and abandoned, total depth 1,075 feet. Humble Oil & Refining Co.'s No. 1 Clayton, total depth 1,644 feet, plugged back to 1,070 feet, oil sand 1,004-43 feet, initial production 40 bbls. oil and 3 bbls. of water.

Haskell County

Bridwell Oil Co.'s No. 1 Stone and others, dry and abandoned, total depth 1,614 feet.

Throckmorton County

Swain and Holcomb's No. 1 Morrison, dry and abandoned, total depth 540 feet.

Wichita County

John O'Neil's No. 1 Woodruff, dry and abandoned, total depth 930 feet. The Texas Company's No. 399 Waggoner, oil sand 730-34 feet, initial production 25 bbls., total depth 741 feet.

Young County

Ard and Panhandle Refining Co.'s No. 1 Jeffery, dry and abandoned, total depth 825 feet. Caldwell and others' No. 1 Furry Realty Co., dry and abandoned, total depth 1,077 feet. Culberson Brothers' No. 1 Jones, dry and abandoned, total depth 800 feet. Davis and others' No. 1 Stratton, dry and abandoned, total depth 557 feet. W. H. Dyer's No. 1 Barnett and others, dry and abandoned, total depth 770 feet. W. D. Gillette's No. 2 Belknap Cattle Co., abandoned location. G. B. Glover's No. 1 Drum, dry and abandoned, total depth 505 feet. P. F. Gwynn's No. 4 Jeffery, oil sand 729-738 feet, initial production 160 bbls., total depth 744 feet. W. F. Hamilton's No. 10 Finch Estate, oil sand 650-67 feet, initial production 250 bbls., total depth 667 feet. Lee and Brashear's No. 1 Jeffery, dry and abandoned, total depth 854 feet. McClung and Dawson's No. 1 Hunter, dry and abandoned, total depth 640 feet. McConald and Campbell's No. 1 Leberman, dry and abandoned, total depth 750 feet. Peckham and others' No. 1 Howard, dry and abandoned, total depth 953 feet. Putnam Oil Co. and Panhandle Refining Co.'s No. 1 Taack, dry and abandoned, total depth 770 feet. A. H. Stolz's No. 2 Baldwin Estate, dry and abandoned, total depth 685 feet. Taylor and others' No. 1 Sanders, dry and abandoned, total depth 605 feet. The Texas Company and McKanna's No. 5 Jeffery

"B," oil sand 718-31 feet, initial production 215 bbls., total depth 731 feet. The Texas Company and Petroleum Co.'s No. 1 Jennings, dry and abandoned, total depth 793 feet. Watson and others' No. 1 Terrell Estate, dry and abandoned, total depth 702 feet. T. F. West and others' No. 1 Miles, dry and abandoned, total depth 952 feet. Wichita Production Co.'s No. 1 Keith, oil sand 700-08 feet, initial production 10 bbls. on pump, total depth 708 feet. Willis and Terrell's No. 1 Belknap Cattle Co., dry and abandoned, total depth 563 feet. Knox and others' No. 1 Brashears, abandoned location.

COMPLETIONS IN RANGER DISTRICT

Brown County

Pann Petroleum Corp.'s No. 1 J. H. Fry temporarily abandoned, total depth 1,610 feet. Hammon and Heyser's No. 1 Starkey, oil show 866-82 feet, initial production on pump 3 bbls., total depth 882 feet.

Coleman County

Anderson and others' No. 1 Burkett, oil sand 1,606-14 feet, initial production 150 bbls., total depth 1,614 feet. Arcadia Refining Co. and others' No. 1 Golson, oil sand 1,577-93½ feet, initial production 480 bbls., total depth 1,593½ feet. Brown and Ekholm's No. 10 Golson, oil sand 1,596-1,606 feet, initial production 105 bbls., total depth 1,606 feet. Neversuch Oil Co.'s No. 1 Burkett, oil sand 1,598-1,601 feet, initial production 150 bbls., total depth 1,601 feet. Jameson, Pollard and Forster's No. 2 Kingsberry, oil sand 1,360-65 feet, initial production 120 bbls. of oil and 500,000 feet of gas, total depth 1,365 feet.

Eastland County

Rover Drilling Co.'s No. 1 Herring abandoned location.

Palo Pinto County

Dalton and others' No. 1 Dalton, temporarily abandoned, total depth 525 feet. Beatly and others' No. 1 Slemons, dry and abandoned, total depth 1,640 feet.

Stephens County

Loftin and Jordon's No. 2 Smith, temporarily abandoned location.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Stanolind Oil & Gas Co.'s No. 3 Percival, abandoned location.

Gray County

Adams Prince and others' No. 1 Moree, top pay 2,509-12 feet, initial production 80 bbls., total depth 2,512 feet. Magnolia Petroleum Co.'s No. 1 Latham, top pay 2,922 feet, initial production 5,000 bbls., total depth 2,922 feet.

Hutchinson County

Canadian River Oil Co.'s No. 1 Dunway, 11,000,000 feet of gas 2,430-40 feet, 20,000,000 feet of gas 2,505-55 feet, and 35,000,000 feet of gas at 2,680-2,720 feet, total depth 2,725 feet.

NORTH TEXAS PRODUCTION
Week Ending April 4, 1931

	Bbls.
Panhandle district—	
Carson County	3,440
Hutchinson County	7,960
Gray County	40,070
Moore County	235
Potter County	0
Wheeler County	360
Total production this week	52,065
Total production last week	55,936
Decrease	3,871
Wichita Falls district—	
Archer County	11,520
Baylor County	640
Clay County	640
Cooke County	1,905
Foard County	45
Jack County	919
Haskell County	25
Montague County	3,525
Throckmorton County	321
Wilbarger County	9,630
Wichita County	19,020
Young County	12,010
Total production this week	60,200
Total production last week	60,416
Decrease	216
Ranger district—	
Brown County	3,665
Callahan County	1,445
Coleman County	1,500
Comanche County	676
Palo Pinto County	321
Eastland County	3,445
Shackelford County	3,770
Stephens County	4,640
Total production this week	19,472
Total production last week	18,481
Increase	991

Lessors Operate in Restraint of Trade Charged at Hearing

WASHINGTON, D. C., Apr. 4.—Protest against the striking out of the A.P.I. code rule, which prohibits the loaning and leasing of equipment, by the Federal Trade Commission was voiced at the hearing this week before the commission by representatives of the oil industry. Arguments in opposition to the code ruling were presented by independent oil company representatives.

W. R. Boyd, executive vice president of the American Petroleum Institute, pointed out that the practice of lending or leasing equipment to retailers of petroleum products has brought about a condition in which service stations which do a monthly business of 16,000 gallons of gasoline have as many as 36 pumps when three pumps would be sufficient. Edward H. Hillp and William F. Burke, representing the small companies, protested against reapproval of the marketing code provisions unless protection be provided to the independents against the "lease and agency" practice of the majors.

Sitting on the commission were, C. W. Hunt, chairman, and Commissioners Edgar A. McCullough, Garland S. Ferguson, Jr., William E. Humphrey, and M. M. Flannery, directors of trade practice conferences.

Commissioner McCullough read the ruling against lending of equipment and asked how this practice affected the public. Roy B. Jones, president of Panhandle Refining Co., answered that these concession costs kept prices or gasoline from coming down and that they added to the cost of distribution. The industry, according to Mr. Jones, was attempting "to get away from the practice of putting a man in business." Mr. Jones said, "we ought to have a rule cutting down by one-half the number of filling stations. This would be the quickest way of reducing costs to the public."

Comment arose in connection with the Sinclair decision by the California Supreme Court which found that borrowed equipment could not be used for any but the lessor's products, without touching upon the legality of such lending. E. L. Stephens, general attorney of Standard Oil Co. of Indiana, asserted that the lending practice is in violation of the Clayton Act.

Lease and agency contracts used by the major oil companies were assailed by Mr. Hillp and J. B. Frampton, representing independent oil marketers, who contended that such agreements tie up independent service stations with exclusive selling arrangements allegedly operate in restraint of trade. Thus, according to these men, the large companies assume control of outlets without the responsibility of ownership. Mr. Frampton said that many outlets had been closed to independents through this practice. The independent retailers, according to Mr. Frampton, were being forced into these agreements by threats to build competitive stations in the neighborhood of the small dealer.

BETTER CRUDE IN GERMANY

NEW YORK, Apr. 4.—Crude oil deposits, equal in quality to the best crudes, have been discovered underlying potash beds in Germany, according to Chairman Burbach of the German potash syndicate. The deposits, if at all extensive, should materially stimulate petroleum development in Germany. Crudes thus far brought to light in German fields have been extremely low in gasoline content in most instances.

ROYAL DUTCH IN GERMANY

NEW YORK, Apr. 4.—Confirmation of the decision of Royal Dutch Co. to exercise its option covering a financial interest in North European Oil Co. was received yesterday by Zimmerman & Forshay, bankers.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 54)

Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. — S.O. 3,134-65 ft. and 3,210-17 ft; estimated 2 bailers; T.D. 3,265 ft.

Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 884 ft. W of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. — S.D. 3,351 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. — S.D. 2,770 ft.

Magnolia Pet. Co.'s No. 1 Barrett, 330 ft. S and E, NE, Sec. 112, Blk. 3, L.&G.N. Sur. — Cmtd. 8-in. 2,508 ft.

Magnolia Pet. Co.'s No. 1 Eddington, 330 ft. N, 370 ft. E, NE, Sec. 84, Blk. B-2, H.&G.N. Sur. — Drlg. 2,536 ft.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. — Fishing for bit; T.D. 2,620 ft.

Operators Royalty & Prod. Co.'s No. 2 Vanniman, 330 ft. S and W, E½ NE, Sec. 175, Blk. 3, L.&G.N. Sur. — Drlg. 2,835 ft.

Sanders et al's No. 1 Wright, 330 ft. S, 114 ft. E, Sec. E, Sec. 164, Blk. 3, L.&G.N. Sur. — Coring 2,597 ft.

Skelly O. & G. Co.'s No. 1 Henston, 330 ft. N, 330 ft. E, Sec. 164, Blk. 3, L.&G.N. Sur. — S.D. 1,100 ft.

Stanolind O. & G. Co.'s No. 2 Cobb, 330 ft. S and E, Sec. 165, Blk. 3, L.&G.N. Sur. — Drlg. 2,460 ft.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. — S.D. 2,686 ft.

The Texas Co.'s No. 1 Webb, 330 ft. S and E, Sec. 12, Blk. 26, H.&G.N. Sur. — S.D. 2,675 ft.

Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. — Cellar.

HUTCHINSON COUNTY

Continental Oil Co.'s No. 1 Moore, 990 ft. S, 2,276 ft. W, S½ SW, Sec. 21, Blk. M-21, T.C. Sur. — S.D. 3,085 ft.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. — S.D. 450 ft. (SLM).

Dixon Creek Oil Co.'s No. 1-F Johnson Bros., 330 ft. N and E of W 67 ac., SW, Sec. 15, Blk. XO3, H.&O.B. Sur. — S.D. 3,122 ft; 4,000,000 ft. gas and oil show 3,070 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. — S.D. 2,070 ft.

Huber Pet. Co.'s No. 1 McIlroy, 330 ft. S, 330 ft. W, Sec. 26, Blk. Y, A.P.R. Sur. — S.D. 2,080 ft.

Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. — Run 6-in. csg.

Liner et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. — Spudded and S.D.

Stanolind O. & G. Co.'s No. 1 Barnhill, common cor. of Tracts 28, 29, 30 and 31, G. Martinez Sur., Blk. 2 — T.D. 3,498 ft; plugged back to 3,400 ft.

Stanolind O. & G. Co.'s No. 2-A Pitcher, 990 ft. S, 330 ft. W, SE, Sec. 19, Blk. M-21, T.C.R.R. Sur. — Drlg. 3,085 ft.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. — S.D. 3,115 ft.

The Texas Co.'s No. 1 Moore, 990 ft. N, 330 ft. W, SE, Sec. 21, Blk. M-21, T.-C. Ry. Sur. — S.D. 1,372 ft.

Texilvania Oil Co.'s No. 1 Harvey, 330 ft. N and W, SW NW, Sec. 14, Blk. M-21 — S.D. 3,092 ft; estimated 5-bbl. well.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. — T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch — Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Cloud & Dana's No. 1 Jones, 330 ft. N and E, SW, Sec. 169, Blk. 3-T, T.&N.O. Sur. — Run 6-in. 3,195 ft.

Continental Oil Co.'s No. 1 Brown, 990 ft. N and W, SE, Sec. 172, Blk. 3-T, T.&N.O. Sur. — S.D. 3,416 ft.

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. S and W, NE, Sec. 135, Blk. 3, T.&N.O. Sur. — T.D. 3,526 ft; plugged back to test.

Gulf Prod. Co.'s No. 2 Kilgore, C SE, Sec. 29, Blk. P.Mc., E.L.R.R. Sur. — Run 8-in. csg. 2,844 ft.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.& T.C. Sur. — Location.

Sunray Oil Co.'s No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. — Cellar.

Plains Holding Co.'s No. 1 Bridges, 1,690 ft. S and E, NW, Sec. 252, Blk. 3-T, T.&N.O. Sur. — T.D. 3,420 ft; plugged back for gas.

Plains Holding Co.'s No. 1 Bivins, 370 ft. E, 660 ft. S, S½ N½, Sec. 95, Blk. 46, H.&T.C.R.R. Sur. — Rigging up.

Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. — Rig on ground.

The Texas Co.'s No. 1 Jester, C SW, Sec. 14, Blk. 6-T, T.&N.O. Sur. — Rig up.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G. B.&B. Sur. — S.D. 580 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. — Spudded and S.D.

Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. — Drlg. 900 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1-B Crawford — Drlg. 1,070 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, NW cor. SE, Sec. 2, Blk. A-9, H.&G.N. Sur. — Rig.

Devore & Robinson's No. 1 Sitter, 2,310 ft. S and E, Sec. 33, Blk. 24, H.&G.N. Sur. — S.D. 2,193 ft; estimated 63,000,000 ft. gas.

Fain & McGahay's No. 1 Oscar Close, C NW, Sec. 78, Blk. 23, H.&G.N. Sur. — Rig.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. — Rigged up and S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 54)

Kornrumpf et al's No. 1 Garren, 330 ft. S and W Sec. 15, Blk. 79, Public School Land — Shut down 1,280 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. — Spudded 20 ft. and shut down.

ECTOR COUNTY

Galt, Brown & Penn's No. 1 Cowden, C SE Sec. 12, Blk. 44, Twp. 2s, T.&P. Sur. — Drlg. 1,250 ft.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. — Shut down 3,275 ft.

Southern Crude Oil Pur. Co.'s No. 2 Crowder & Co., 660 ft. from S and W of NE cor. Sec. 34, Blk. 43, Twp. 1n, T.&P. Sur. — Mudding between 10 and 12-in. casing; total depth 3,972 ft.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. — Shut down 3,089 ft.

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. No. 254, S.F. No. 7,247 ... Shut down 540 ft.

FISHER COUNTY

Roeser & Pendleton's No. 1 Gribble (Russell), 660 ft. from S and 440 ft. from W of NW Sec. 210, B.B.B. &C. Sur. ... Running 6-in. casing 3,050 ft.

Stanolind Oil & Gas Co.'s No. 2 Steele, 1,200 ft. E and 330 ft. N or SW cor. Sec. 210, B.B.&C. Sur. ... Moving in.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE Sec. 4, Blk. A-8, P.S.L. Sur. ... Shut down 3,435 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ... Spudded and shut down.

Perry & Posey's No. 1 Justice, 1,980 ft. from S and 1,680 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ... Shut down 1,042 ft.

GLASSCOCK COUNTY

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor. Sec. 31, Blk. 34, Twp. 2s, T.&P. Sur. ... Temp. aband.; total depth 600 ft.

HOWARD COUNTY

Continental Oil Co.'s No. 1 Brindley, 660 ft. from S and E of Sec. 18, Blk. 33, Twp. 1s, T.&P. Sur. ... Fishing 1,910 ft.

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 20, Twp. 1s, T.&P. Sur. ... Spudded and shut down.

Moody Oil Corp.'s No. 33-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ... Temp. aband. 261 ft.

HUDSPETH COUNTY

Patillo & Welch's No. 1 Briggs, 300 ft. from S and W Sec. 13, Blk. 73, Twp. 7, T.&P. Sur. ... Shut down 305 ft.

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ... Spudded 35 ft. and shut down.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E Sec. 2, Blk. 3, H.&T.C. Sur. ... Shut down 1,360 ft.

Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ... Drlg. 3,810 ft.

Perry Fox's (formerly carried as Crawford et al's) No. 1 Williams, 450 ft. from N and 150 ft. from W, Sec. 8, Gonzales County School Land Sur. ... Show oil 1,339-42-43 ft.; total depth 1,443 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ... Plugging back to 1,220 ft. to shoot; total depth 1,506 ft.

JONES COUNTY

Bond & Trout's No. 1 Williams, 330 ft. S and E of SW cor. of J. W. Martin Sur. A-1,308 in Sec. 12 ... Shut down 2,581 ft.

Jameson et al's No. 1 King, 4,681 ft. from S and 150 ft. from E of M. Bueno Sur. No. 196 ... Drlg. 1,490 ft.

Hardly Able Oil Co.'s No. 1 Butler, 5,790 ft. from S and 330 ft. from E of W. Littlefield Sur. No. 282, Abst. 251 ... Drlg. 2,265 ft.

Shaheen et al's No. 1 Chittim, 165 ft. from S and W of 139.8-acre farm in G. Martinez Sur. No. 195 ... Swabbed 20 bbls. in 24 hours; shut down 2,030 ft.

Young & McNeill's No. 1 L. R. Cade, 150 ft. from N and 450 ft. E of NW cor. of J. A. Williams 200-acre tract in Sec. 17, but in Sec. 12, Blk. 19, T.&P. Sur. ... Building rig.

LOVING COUNTY

Eppenauer et al's No. 2 Allen, 2,310 ft. from NE and 330 ft. from NW Sec. 90, Blk. 1, W.&N.W. Sur. ... Shut down 4,140 ft.

Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ... Shut down; total depth 50 ft.

Fallbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ... Fishing; total depth 1,335 ft.

Henshaw et al's No. 2 Reagan & McElvain, 1,650 ft. from SW and 990 ft. from SE Sec. 84, Blk. 7, W.&N.W. Sur. ... Rig.

Hoffman et al's No. 1 Ramsey et al, 330 ft. NE and SE Sec. 83, Blk. 1, W.&N.W. Sur. ... Drlg. 2,630 ft.

Hoffman et al's No. 2 Ramsey et al, 2,310 ft. from NE and 330 ft. from SE Sec. 83 ... Drlg. 220 ft.

Irwin and others' No. 1 Auld, 1,825 ft. from NE and 1,298 ft. from NW Sec. 67, Blk. 1, W.&N.W. Sur. ... Rig up.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ... Shut down 4,050 fe.

Lockhart & Co.'s No. 2 fee, 676 ft. S. 330 ft. W Sec. 91, Blk. 1, W.&N.W. Sur. ... Rigged up and shut down.

Lockhart's No. 1 Bell, 1,721 ft. from NE and 410 ft. from SE Sec. 91, Blk. 1, W.&N.W. Sur. ... Rigging up.

Lockhart & Co.'s No. 2 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. ... Rigged up and shut down.

Martin et al's No. 1 Johnson, 1,330 ft. from NW and 330 ft. from SW Sec. 86, Blk. 1, W.&N.W. Sur. ... Location.

Richmond Drlg. Co.'s No. 1 Russell, 990 ft. from NE and 330 ft. from NW Sec. 80, Blk. 31, W.&N.W. Sur. ... Spudded and shut down.

Rush et al's No. 1 Wheat, 330 ft. from NW and SW Sec. 77, Blk. 1, W.&N.W. Sur. ... Cellar.

Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ... Shut down 2,914 ft.

W. A. Suddreth et al's No. 1 Capitola Pool, 2,970 ft. from NE and 990 ft. from NW Sec. 73, Blk. 33, H.&T.C. Sur. ... Rig up machine.

Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ... Rig.

California Co.'s No. 2 Allen, 2,310 ft. from SE and SW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ... Drlg. 4,150 ft.

California Co.'s No. 3 Allen, 2,191 ft. from NW and 2,182 ft. from SW Sec. 90, Blk. 1, W.&N.W. Sur. ... Drlg. 1,460 ft.

California Co.'s No. 4 Allen, 3,121 ft. from NW and 3,113 ft. from SW Sec. 90, Blk. 1 ... Bldg. rig.

West Texas Pet. Corp.'s No. 1 Salsbury, 930 ft. from NW and SW Sec. 89, Blk. 1, W.&N.W. Sur. ... Drlg. 4,005 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ... Shut down 2,655 ft.

Voss & Bryan and others' No. 1 F. Bredenberger, 600 ft. from N and 1,000 ft. from W Sec. 455, E. Henkel Sur. ... Shut down 675 ft.

PECOS COUNTY

Cardinal Oil Co.'s No. 1 White & Baker, 990 ft. from N and 990 ft. from E Sec. 47, Blk. 194, T.C.&S.F. Sur. ... Fishing; total depth 1,550 ft.

Culberson Bros.' No. 1 Tippett (Humble), 150 ft. S and 845 ft. E of C Sec. 40, Blk. 194, G.C.&S.F. Sur. ... Drlg. 126 ft.

Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW Sec. 28, Blk. 3, H.&T.C. Sur. ... Shut down 1,596 ft.

Hagen et al's No. 1 Shearer, 660 ft. from SE and 660 ft. from SW Sec. 45, Blk. 10, H.&G.N. Sur. ... Rig up.

Magnolia Pet. Co.'s No. 1 Eaton, 2,310 ft. from SW and 330 ft. from NW Sec. 35, Blk. 3, H.&T.C. Sur. ... Shut down 1,618 ft.; show oil 1,595-1,618 ft.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE Sec. 40, Blk. 104, G.C.&S.F. Sur. ... Location.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. ... Shut down 2,283 ft

Penn Oil Co. et al's No. 1 Alvis, 2,358 ft. from S and 1,327 ft. from W Sec. 155, Blk. 3, T.&P. Sur. ... Underreaming; total depth 2,750 ft.

Perren Oil Co.'s No. 2 Eaton, S of E Sec. 27, Blk. 3, H.&T.C. Sur. ... Shut down 1,765 ft.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203,, Blk. 3, T.&P. Sur. ... Shut down 5,000 ft

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ... Shut down 506 ft

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW Sec. 31, Blk. 34, H.&T.C. Sur. ... Location.

Whitaker et al's No. 1 Mary Devlin, 150 ft. from N and 150 ft. from E Sec. 69, F. Hernandez Sur. ... Spudded and shut down.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,120 ft. S and 1,100 ft. from W Sec. 25, Blk. 9 ... Location.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W Sec. 17, Blk. 6, H.&G.N. Sur. ... Shut down 380 ft.

Humble Oil & Ref. Co.'s No. 1 Bolmorhea Livestock Co., 1,320 ft. from N and 1,320 ft. from W Sec. 33, Blk. 5, H.&G.N. Sur. ... Location.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. Sur. ... Temporarily abandoned.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. ... Cleaning out 4,415 ft.

California Co.'s No. 2 Kloh & Rumsey, 990 ft. from S and 1,520 ft. from E Sec. 11, Blk. Y4, Twp. 4, T.&P. Sur. ... Set casing; total depth 1,609 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ... Shut down 2,175 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ... Drlg. 1,825 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 37, Blk. K, G.H.&S.A. Sur. ... Shut down 5,006 ft.; contract depth.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ... Drlg. 1,830 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W. G.H.&S.A. Sur. ... Shut down 5,027 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ... Fishing 5,002 ft.

Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ... Spudded and shut down.

Seifert & Dibbie's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ... Drlg. 3,010 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 23, H.&T.C. Sur., but in Sec. 16, Blk. 34, Twp. 4s, T.&P. Sur. ... Drlg. 995 ft.

TAYLOR COUNTY

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ... Drlg. 6,325 ft.

Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land ... Shut down 2,785 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ... Shut down 2,669 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ... Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ... Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E.L. Sur. ... Shut down 880 ft.; moved off machine.

Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F. Sur. ... Shut down 6,120 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ... Shut down 912 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ... Shut down 760 ft.; show oil and gas 725 ft.

Fitzgerald & Tallaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. ... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. ... Shut down 1,994 ft.

Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ... Shut down 200 ft.

UPTON COUNTY

Duffey and others' No. 1 McClintic, 990 ft. from N and 330 ft. from E C.C.S.D.&R.G.N.G. Sur. ... Drlg. 1,990 ft.

Mintex Oil Co.'s No. 1 Lane, 2,310 ft. from N and 1,650 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur. ... Running 12¼-in. casing 445 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ... Shut down 5,360 ft.

O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ... Waiting for cement to set 6,770 ft.

WARD COUNTY

Bradford et al's No. 1 Carson, 990 ft. from NE and SE Sec. 26, Blk. 5, H.&T.C. Sur. ... Drlg. 800 ft.

Beckley and others' No. 1 Johnson, 4,140 ft. from NE and 990 ft. from SE Sec. 8, Blk. 32, H.&T.C. Sur. ... Shut down 450 ft.

Buster Black's No. 1 Hall & Roberts, 990 ft. from NE and 1,650 ft. from NW Sec. 17, Blk. 34, H.&T.C. Sur. ... Spudded.

Clyde Bradford's No. 1 Hardinage and Welsor, 330 ft. from SE and 330 ft. from SW, H.&T.C. Sur. ... Drlg. 485 ft.

Chester & Smith's No. 1 Booger, 1,200 ft. from SE and 150 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. ... Drlg. 2,020 ft.

Central Oil & Gas Co.'s No. 1 Barrow, 330 ft. from NW and 1,263 ft. from SW Sec. 55, J. W. Jackson Sur. ... Rig up.

Gibson & Johnson's No. 1 Johnson, 4,140 ft. from SE and 990 ft. from NE Sec. 10, Blk. 32, H.&T.C. Sur. ... Prepare to run casing; total depth 640 ft.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur. ... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,515 ft.; plugged back to 2,477 ft.

Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW Sec. 26, Blk. 5, H.&T.C. Sur. ... Drlg. 130 ft.

Magnolia Pet. Co.'s No. 1 Sealy (Atlantic), 2,130 ft. from S and 1,650 ft. from E Sec. 45, Blk. F, G.M.M.B.&A. Sur. ... Underreaming; total depth 2,985 ft.

R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. ... Drlg. 3,180 ft.

Peck and others' No. 1 Merrett, 3,166 ft. from NE and 2,648 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ... Drlg. 310 ft.

Reckford & Ferglarr's No. 1 Booger, 4,051 ft. from NE and 1,983 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ... Drlg. 1,965 ft.

Shipley et al's No. 5 Hayzlett, 2,490 ft. from SE and 1,980 ft. from SW Sec. 17, Blk. 5, H.&T.C. Sur. ... Shut down 2,520 ft.

Simms Oil Co.'s No. 1 Himmel, 330 ft. from NE and 2,310 ft. from SE Sec. 30, Blk. B-29, P.S.L. Sur. ... Cellar and material.

California Co. et al's No. 1 Lanham, 990 ft. from NE and SE Sec. 35, Blk. 34, H.&T.C. Sur. ... Building rig.

California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. ... Drlg. 2,235 ft.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ... Shut down 3,785 ft.

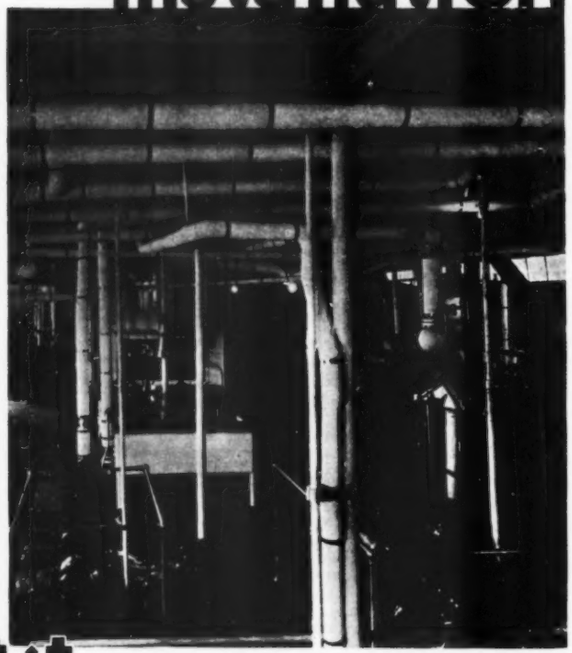
WINKLER COUNTY

White et al's No. 1 Owenby, 305 ft. from NE and 1,185 ft. from SE Sec. 7, Blk. 32, H.&T.C. Sur. ... Location.

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 ... Shut down 4,640 ft.

from a fitting

to a complete .. installation



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EAST CENTRAL TEXAS WILDCATS

(Continued from Page 53)

Cranfill & Reynolds' No. 1 G. P. McGrede, 328 ft. from S and 250 ft. from W of 16-ac. lease, Dolores Sanches Sur. ..... Derrick.

Daisy Oil Co.'s No. 1 Mrs. H. B. Ware, 1,000 varas from N and 350 ft. from W of survey, Avery B. Johnson Sur. ..... Rig up.

East Texas Refining Co.'s No. 2 Fisher (Rodden), 200 ft. from N and 200 ft. from W of E 148 acres of 198-ac. tract, John Ruddle Sur. ..... Drlg. 2,885 ft.

Eslick and Little's No. 1 W. R. Nicholson, 1,205 ft. from E and 150 ft. from S of 1,094-ac. tract, Marsh Mann Sur. ..... Drlg. 2,660 ft.

D. H. Felder's No. 1 Elder (Trip), 200 ft. N and 200 ft. W of Elder tract, J. W. McCorry Sur. ..... Oil 3,702 ft. in lime.

Flannagan Prod. Co.'s No. 1 A. J. Green, 200 ft. from E and 150 ft. from S of 35-ac. tract, G. W. Hooper Sur. ..... Derrick.

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,800-ac. tract, Martin Lant Sur. ..... Top Georgetown lime 3,674 ft.; T. D. 3,723 ft.

Heep Oil Corp.'s No. 1 Barber, 800 ft. from N and 500 ft. from E of survey, William McCurry Sur. ..... Drlg. 2,960 ft.

Houston Oil Co.'s No. 1 J. G. McGrede, 150 ft. from E and 150 ft. from S of 100-ac. lease and W offset to Pilot Oil Co.'s No. 1 McGrede, Dolores Sanches Sur. ..... Shut down.

Hudson and McCamey's No. 1 Smith, 150 ft. S and 150 ft. W of W. Smith 43-ac. tract, J. S. Carrithers Sur. ..... Location.

Hunter and Howe's No. 1 Watson, 175 ft. from S and 160 ft. from W of 92-ac. tract, Mary Van Winkle Sur. ..... Set 65 ft. of 10-in. csg.

Hurburt and Brown's No. 1 L. L. Mackey, 990 ft. from E and 990 ft. from S of 269-ac. tract, 1,000 ft. from W and 990 ft. from S of survey, G. Y. Chambers Sur. ..... Shut down 400 ft.

Hurburt and Brown's No. 1 A. J. Page, 1,670 ft. S and 2,080 ft. E of SW cor. of Ed Robinson Sur., James Dixon Sur. ..... Shut down; T. D. 3,691 ft.

Leonard Pet. Co.'s No. 1 W. S. Pryor, 200 ft. from S and 200 ft. from W of 152-ac. tract, 2,600 ft. from E and 2,350 ft. from N of survey, Hamilton McNutt Sur. ..... Derrick.

Marlin Syndicate's No. 1 Springhill School, 1,780 ft. from S and 9,200 ft. from W of survey, Dolores Sanches Sur. ..... Moving in rig.

McMillan Pet. Co.'s No. 1 George Fenton, 150 ft. from S and 150 ft. from W of 10 acres of 20-ac. tract, Dolores Sanches Sur. ..... Drlg. 2,405 ft.

Magnolia Pet. Co.'s No. 2 B. Rodden, 500 ft. NE and 200 ft. SE of NW cor. of 42-ac. lease, William Robinson Sur. ..... Init. prod. 117 bbls. in 15 minutes; T. D. 3,603 ft.

George McCamey et al's No. 1 J. F. Richards, 150 ft. from N and 150 ft. from W of 50-ac. tract, Mary Van Winkle Sur. ..... Bailed dry; set 48 hours; 500 ft. oil in hole.

Mid-Kansas Oil & Gas Co.'s No. 1 E. M. Nettleton, 150 ft. from S and N offset to Republic's No. 1 Fisher, John Ruddle Sur. ..... Rig up.

Mid-Kansas Oil & Gas Co.'s No. 1 J. J. Castleberry, 150 ft. from S and 150 ft. from W of most southerly SW cor. tract, Dolores Sanches Sur. ..... Derrick.

Mid-Kansas Oil & Gas Co.'s No. 1 Burton, 150 ft. from N and 150 ft. from W of 193.9-ac. tract and survey, Hollingsworth Sur. ..... Rig up.

Harry Moss et al's No. 1 G. B. Tenery, 150 ft. from S and 151 ft. from W of 40-ac. tract and 10-ac. lease, William Robinson Sur. ..... Drlg. 1,350 ft.

Oriental Oil Co.'s No. 1 F. Johnson, 808 ft. from N and 530 ft. E of the NW cor. of Humble, J. A. Knowles 100-ac. tract, Mary Van Winkle Sur. ..... Set 192 ft. 12½-in. csg.

Pace et al's No. 1 C. Harrell estate, 300 ft. from E line and 150 ft. from N line of 150-ac. tract, A. M. Coleman Sur. ..... Derrick.

Phares and Sample's No. 1 Maude Smith, 4,800 ft. from W and 1,400 ft. from N of survey, Isaac Skillern Sur. ..... Derrick.

Pilot Oil Co.'s No. 1 G. E. McGrede, 150 ft. from S and 150 ft. from W of 36-ac. tract, Dolores Sanches Sur. ..... Drlg. 2,875 ft.

Republic Prod. Co.'s No. 1 Fisher (Rodden), 200 ft. from N and 200 ft. from E of W 50 acres of 198-ac. tract, John Ruddle Sur. ..... Rig up.

Roy Roberts et al's No. 1 L. M. Colburn, 150 ft. from E and 150 ft. from S of 45-ac. lease, 5,700 ft. from E and 850 ft. from N of survey, Henry Hathaway Sur. ..... Derrick.

C. Rosenfield et al's No. 1 J. A. Knowles, 700 ft. from E, 1,250 ft. from N, William Lyles Sur. ..... Drlg. 1,240 ft.

Jim Rusk et al's No. 1 G. B. Tenery, 110 ft. from N and 110 ft. from W of 10-ac. lease, 5,050 ft. from W and 49,010 ft. from N of survey, William Robinson Sur. ..... Set 6⅝-in. csg.

Selby Oil & Gas Co.'s No. 1 P. J. Snarley, 200 ft. from N and 200 ft. from E of survey, William Lyndale Sur. ..... Set 6⅝-in. csg. at 3,520 ft.

Shell Pet. Corp.'s No. 1 J. D. Davis, 2,350 ft. from W and 4,100 ft. from N of survey, William Robinson Sur. ..... T. D. 3,631 ft.; 200 bbls. first hr.

Simms Oil Co.'s No. 1 W. M. Harley, 150 ft. NE and 150 ft. from SE of 10-ac. lease, William Robinson Sur. ..... Rig up.

Skipper and Lacey's No. 1 Mrs. Maggie Magrill, 370 ft. from N and 850 ft. from W of 17.7-ac. lease and 47-ac. tract, Dolores Sanches Sur. ..... Drlg. 3,131 ft.

B. A. Skipper Oil Co.'s No. 1 Thad Snoddy, 150 ft. from N and 1,368 ft. from E of survey, W. H. Castleberry Sur. ..... Drlg. 3,494 ft.

Smith Ref. Co.'s No. 1 J. A. Knowles, 150 ft. from S. 150 ft. from NW of 75-ac. tract, 5,200 ft. from W. 7,700 ft. from N, Mary Van Winkle Sur. ..... Derrick.

Sultan Oil Co.'s No. 1 J. F. Spangler, 330 ft. from E and 300 ft. from S of NE of 160-ac. tract, 2,600 ft. from E and 1,500 ft. from S of survey, G. W. Hooper Sur. ..... Coring ahead.

Sultan-Daniels et al's No. 1 Springhill School, 430 ft. from E and 980 ft. from S of 15-ac. tract, Dolores Sanches Sur. ..... Derrick.

Sutton et al's No. 1 McNeely, 150 ft. from N and 150 ft. from E of 7.73-ac. tract, W. P. Chisum Sur. ..... Rig up.

Tidal Oil Co.'s No. 1 Bean heirs, 250 ft. from W and 200 ft. S of railroad in 70-ac. tract, J. S. Carrithers Sur. ..... Derrick.

Tidal Oil Co.'s No. 1 A. A. Castleberry, 250 ft. from S and 250 ft. W of most northern SW cor. of 102-ac. tract, William Robinson Sur. ..... Drlg. 2,950 ft.

Tidal Oil Co.'s No. 1 F. K. Lathrop, 6,400 ft. from W and 5,550 ft. from N of survey, William Robinson Sur. ..... Set csg. 3,570 ft.

Paul Vitek et al's No. 1 Louise Osborne, 150 ft. from E, 150 ft. from S and W 46-ac. of 84-ac. tract, 2,000 ft. from W, 450 ft. from S, R. R. Bobbett Sur. ..... Shut down 1,130 ft.

Tests indicate
DULUX FINISH RETAINS
COLOR AND GLOSS
50% to 100% longer

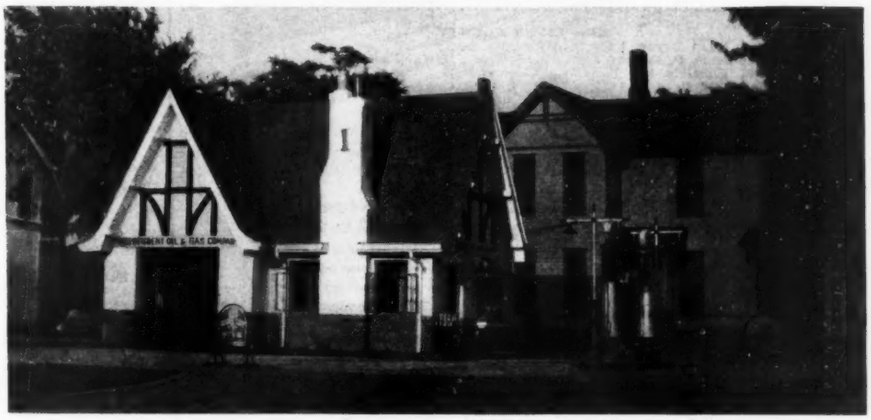
YES . . . Three-year field tests indicate this superiority over ordinary oil and varnish types of finishes where appearance is important.

HOW to keep filling stations looking spick and span? How to finish curb pumps and lubesters so as to keep them looking bright and colorful? How to finish tank wagons and other marketing equipment which meets the public eye constantly?

There is public good will involved here. And your maintenance costs depend on your answer. For these very reasons, du Pont offers Dulux Finish.

Dulux is not entirely new to the oil industry. Leading companies are using it now and plan to standardize on it for all their equipment. But first du Pont spent thousands of dollars testing Dulux under conditions of actual service.

One thing all tests showed—that Dulux retains its color and gloss and original appearance 50% to 100% longer than the types of finishes in use.



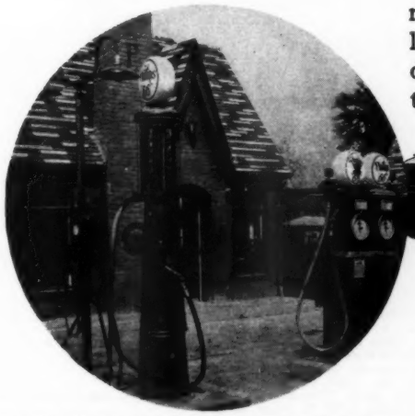
A finish that retains gloss and color over a long period is ideal for Service Stations. Dulux fulfills these requirements.

And the second important point is that Dulux lasts 50% to 100% longer than ordinary finishes.

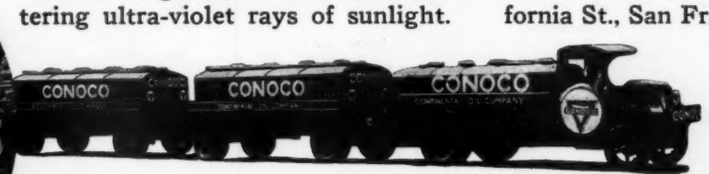
Dulux finishes wear away so slowly that they still give full protection to the covered surface after ordinary films have cracked, peeled, scaled and exposed the wood or metal underneath. They are impervious to moisture. They resist to a remarkable degree the action of petroleum, petroleum solvents, ordinarily destructive gases, and the film-shattering ultra-violet rays of sunlight.

Write for Dulux Bulletin

In this year of striving to cut costs Dulux answers a great need in the oil industry. Let us tell you what we are telling other oil men about this remarkable new chemical development—as important as was Duco for the automotive industry. Your request will bring a technical bulletin on Dulux which contains some of the most interesting reading you ever received. Write E. I. du Pont de Nemours & Co., Dept. K4, 1616 Walnut St., Philadelphia, or 351 California St., San Francisco.



The Phillips Petroleum Company was one of the first in the oil industry to adopt Dulux for all equipment, from refineries right down to filling stations.



Linking low distribution costs to lower maintenance costs. The Continental Oil Company profits also by the improved appearance of this prize truck and trailer train in red and white Dulux.

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REG. U. S. PAT. OFF.

DULUX
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James A. Weir Drlg. Co.'s No. 1 J. G. McGrede, 298 ft. from E and 155 ft. from S of Lot No. 3, Dolores Sanches Sur. ..... Derrick.
Werbey and McMinn's No. 1 Solon King, 1,400 ft. from E and 3,300 ft. from S of survey, W. P. Chisum Sur. ..... Drlg. 2,960 ft.
Wise and Jackson's No. 1 F. J. Glover, 350 ft. from N and 125 ft. from E line of survey, George Melton Sur. ..... Location.
Woodlett et al's No. 1 W. M. Harley, 150 ft. from NE and 150 ft. from SE of 10-ac. tract, William Robinson Sur. ..... Drlg. 2,065 ft.
Youngblood, trustee's No. 1 W. N. Lamp, 300 ft. from S and E of most northern NW cor. of tract, 5,800 ft. from W, 1,500 ft. from N, David Ferguson Sur. .. T. D. 2,065 ft.; Georgetown lime.
Yount Lee Oil Co.'s No. 1-A R. S. McKinley, 1,993 ft. S and 2,450 ft. W of NE cor. of 212-ac. tract, William Robinson Sur. ..... Drlg. 2,665 ft.
Yount Lee Oil Co.'s No. 1-B R. S. McKinley, 1,993 ft. from S and 2,440 ft. W of NE cor. of 212-ac. tract, William Robinson Sur. ..... Rig up.
Yount Lee Oil Co.'s No. 1-B F. K. Lathrop, 300 ft. N and E of SE cor. of J. C. Davis tract, William Robinson Sur. ..... Drlg. 169 ft.
Yount Lee Oil Co.'s No. 2-B F. K. Lathrop, 180 ft. W and 300 ft. N of NW cor. of G. B. Tenery 40-ac. tract, William Robinson Sur. ..... Drlg. 2,005 ft.

HUNT COUNTY

Mamie S. Hammond's No. 1 W. H. Adams, center of survey, W of Branson Sur., J. A. McFarland Sur. .... Derrick blew down.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Shut down 2,168 ft.

RAINS COUNTY

Westbrook Oil Co.'s No. 1 William Cates, 160 ft. N and W of NW cor. of E. S. Knight 46-ac. tract and on Cates 266-ac. tract, Calvin Gage Sur. ..... Drlg. 2,400 ft.; top Pecan Gap 2,230 ft.

RED RIVER COUNTY

Everett & Allen's No. 1 Bryan, 1,200 ft. SW of NE cor. of Bryan 130 acres, P. Vaughn Sur. ..... Moving in rig.
Droppleman and Bunely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 130-ac. tract, S. B. Shi Sur. ..... Preparing to make drill stem test.
Everett & Allen's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, William Humphreys Sur. ..... Rig up.

KILGORE AREA—RUSK COUNTY

Beard and Hammond's No. 1 J. S. Bean, 233 ft. from N and 150 ft. from W of S 10 acres of 20-ac. tract, J. Lewis Sur. ..... Derrick.
British-American's No. 1 Emma Thompson, 150 ft. from N and W lines of 25-ac. lease, Robert E. Winn Sur. ..... Drlg. 1,500 ft.
British American Oil Co.'s No. 2 Emma Thompson, 150 ft. out of SW cor. of the 25-ac. lease, Robert E. Winn Sur. ..... Derrick.
Burton Drlg. Co.'s No. 2 E. B. S. Florey, 900 ft. from N line and 115 ft. from E line of 50-ac. tract, Peter Holmes Sur. ..... Derrick.
Cordova Union Oil Co.'s No. 2 C. O. Christian, 150 ft. from E and 150 ft. from S of lease and tract, Robert E. Winn Sur. ..... Drlg. 3,020 ft.
Cordova Union Oil Co.'s No. 3 C. O. Christian, 2,200 ft. from E line and 1,450 ft. from N line of survey, Robert E. Winn Sur. ..... Washing in; T. D. 3,716 ft.
Cordova Union Oil Co.'s No. 4 C. O. Christian, 750 ft. from S and 150 ft. from W of lease and tract, Robert E. Winn Sur. ..... Drlg. 2,800 ft.
Cordova Union Oil Co.'s No. 5 C. O. Christian, 2,100 ft. from W and 1,700 ft. from N of survey, Robert E. Winn Sur. ..... Rig up.
Cox and Hamon's No. 2 D. M. Peterson, 150 ft. from the N and E lines of 40-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,700 ft.
Cox and Hamon's No. 3 D. M. Peterson, 150 ft. from N and W lines of 40-ac. tract, Isaac Ruddle Sur. .... Moving in material.
Cranfill & Reynolds' No. 1 George Thompson, 2,150 ft. from W and 2,100 ft. from N line of survey, Robert E. Winn Sur. ..... Drlg. 3,275 ft.
Curtis and Loe's No. 1 J. S. Bean, 1,650 ft. from S, 200 ft. E of NW cor. of 314-ac. tract and lease, 4,925 ft. from S, 1,075 ft. from W. J. Lewis Sur. ..... Shut down 2,000 ft.
Danciger Oil & Refining Co.'s No. 1 Carlos Bean, 150 ft. from W and 300 ft. from S line of lease, Isaac Ruddle Sur. ..... Derrick.
Devonian's No. 1 R. A. Hartley, 150 ft. from the S and E lines of the 147-ac. tract, William Killen Sur. ... Drlg. 3,289 ft.
East Texas Refining Co.'s No. 1 Wills, 722 ft. from N and 250 ft. from S, 150 ft. from W of 83.24-ac. lease, W. P. Chisum Sur. ..... Rig up.
East Texas Refining Co.'s No. 2 Wills, 200 ft. from N and 150 ft. from E of 80-ac. lease, W. P. Chisum Sur. ..... Rig up.
Harry Elliott's No. 1 Carroll, 175 ft. from N and 200 ft. from E of 7-ac. tract, W. R. Cook Sur. ..... Location.
H. W. Elliott's No. 1 Ferrell, 150 ft. from N and 150 ft. from E of 8-ac. tract, W. M. Ryan Sur. ..... Location.
Elsy Drlg. Co.'s No. 1 George Thompson, 150 ft. from N, 150 ft. from E of tract of 70 acres and 10-ac. lease, 400 ft. S, 500 ft. W, Henry Dobson Sur. ..... Spudded and shut down.
Gulf Production Co.'s No. 1 Brightwell, 330 ft. from N and 330 ft. from W line of tract, Robert E. Winn Sur. ..... Drlg. 2,947 ft.
Gulf Production Co.'s No. 1 Birdsong, 160 ft. from S and 160 ft. from E line of tract, Isaac Ruddle Sur.... Waiting on csg.; T. D. 3,561 ft.
Gulf Production Co.'s No. 2 Rose May Griffin, 150 ft. from the N and W lines of 15-ac. lease, Isaac Ruddle Sur. ..... Coring 3,668 ft.
Gulf Production Co. and Devonian's No. 1 W. L. Laird, 150 ft from E and 150 ft. from S of 60-ac. tract, Isaac Ruddle Sur. ..... Set 196 ft. of 10-in. csg.
Hicks' No. 1 J. N. Peterson, 150 ft. from S and 150 ft. from E line of 41.65-ac. tract, Isaac Ruddle Sur. .... Coring sand 3,685 ft.
Hill and Brown's No. 1 J. N. Peterson, 150 ft. from N and E of the S 41.56-ac. tract of the 56.25-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,500 ft.
Horseshoe Syndicate's No. 1 W. P. Brightwell, 150 ft. from N line and 150 ft. from W line of tract, Robert E. Winn Sur. ..... Coring 3,671 ft.
Houston Oil Co.'s No. 1 S. S. Laird, 150 ft. from N line and 150 ft. from W line of tract, Isaac Ruddle Sur. ..... Set 6⅝-in. csg.; T. D. 3,640 ft.
Houston Oil Co.'s No. 1 Brightwell, 150 ft. from N and 150 ft. from E lines of tract, Robert E. Winn Sur. ..... Drlg. 2,450 ft.
Houston Oil Co.'s No. 1 L. D. Crim, 150 ft. from E line and 200 ft. from N line of survey, Robert E. Winn Sur. ..... Set 6⅝-in. csg.; T. D. 3,720 ft.
Houston Oil Co.'s No. 2 L. D. Crim, 150 ft. from N line and 300 ft. from E line of tract, Henry Hobson Sur. ..... Drlg. 3,325 ft.
Humble Oil & Refining Co.'s No. 10 L. D. Crim, 951 ft. from E and 200 ft. from S of L. D. Crim 628-ac. tract, E. G. Sevier Sur. ..... Washing in; T. D. 3,771 ft.
Humble Oil & Refining Co.'s No. 11 L. D. Crim, 585 ft. from E and 200 ft. from S of L. D. Crim 628-ac. tract, E. G. Sevier Sur. ..... Drlg. 3,783 ft.
Humble Oil & Refining Co.'s No. 12 L. D. Crim, 150 ft. from E and 150 ft. from S of survey, E. G. Sevier Sur. ..... Drlg. 3,660 ft.
Humble Oil & Refining Co.'s No. 1 S. S. Laird, 3,692 ft. from S and 150 ft. from E line of survey and 230-ac. tract, Isaac Ruddle Sur. ..... Set 6⅝-in. csg.; T. D. 3,574 ft.
Humble Oil & Refining Co.'s No. 2 B. F. Laird, 450 ft. from the S line and 1,850 ft. from W line of survey, Isaac Ruddle Sur. ..... Run liner; T. D. 3,664 ft.
Humble Oil & Refining Co.'s No. 3 Peterson, 120 ft. from E and 120 ft. from W, being 740 ft. N and 29* W of Peterson No. 1-B, 12-ac. tract, Isaac Ruddle Sur. ..... Derrick.
Humble Oil & Refining Co.'s No. 5 J. N. Peterson, 4,100 ft. from N line and 3,450 ft. from E line of survey, Isaac Ruddle Sur. ..... Waiting on connection; T. D. 3,662 ft.
E. M. Jones' No. 1 Wells, 248 ft. from N and 150 ft. from W of 41.6-ac. lease, W. P. Chisum Sur. ..... Location.
Killum and Reed's No. 1 Lou Emma Price, 150 ft. from N and 550 ft. from E line of the W. Brock heirs 59.5-ac. tract, William Chisum Sur. ..... Drlg. 1,100 ft.
Killerman and Hind's No. 1 Brock heirs, 460 ft. S and 150 ft. W of the NW cor. of the Houston Oil Co.'s 20-ac. Brightwell lease, Robert W. Smith Sur. ..... Location.
La-Tex Gas Co.'s No. 1 Major Kennedy, 333 ft. from W of survey and 166 ft. from S line of Kennedy 160-ac. tract, Daniel Clark Sur. ..... Set 6⅝-in. csg.; T. D. 3,691 ft.
Lewis Pet. Co.'s No. 1 D. W. Peterson, 150 ft. from S and 150 ft. from W of survey, G. S. Carthews Sur. ..... Set 6⅝-in. csg.; T. D. 3,587 ft.
Magnolia Pet. Co.'s No. 1 Florey, 150 ft. from N and E lines of tract, Peter Holmes Sur. ..... Coring 3,618 ft.
Magnolia Petroleum Co.'s No. 1 C. C. Still, 150 ft. from N and E lines of 100-ac. tract, Meredith McCabe Sur. ..... Location.
Marine Oil Co.'s No. 1 Nat Beason, 150 ft. from S and 150 ft. from W lines of tract, Isaac Ruddle Sur. .... Set 6⅝-in. csg.; T. D. 3,600 ft.
Marine Oil Co.'s No. 2 Nat Beason, 150 ft. from W line and 150 ft. from N line of tract, Isaac Ruddle Sur. ..... Drlg. 2,975 ft.
McMan Oil Co.'s No. 1 Mrs. Sam B. Wills, 171 ft. from S line and 290 ft. from W line of the N 112-ac. tract, William Chisum Sur. ..... Drlg. 2,905 ft.; top Pecan Gap 2,580 ft.
Charles L. McMahon's No. 1 Wills, 150 ft. from E and 175 ft. from S of 52-ac. tract, W. P. Chisum Sur. .... Drlg. 1,560 ft.
Moody-Seagraves' No. 1 Thompson, 150 ft. from N and center E and W of 10-ac. lease, Robert E. Winn Sur. ..... Drlg. 2,700 ft.; top Pecan Gap 2,610 ft.
Moorefield's No. 1 Jessie Ector, 492 ft. from the N line and 650 ft. from W line of 100-ac. tract, Daniel Clark Sur. ..... Drlg. 3,080 ft.
H. V. Oliver and Brown Drlg. Co.'s No. 1 B. F. Hindman, 150 ft. from N, 150 ft. from E of 5-ac. tract, 850 ft. from E, 3,150 ft. from N, Robert Smith Sur. .. Rig up.
J. S. Rushing's No. 1 Thompson, 150 ft. from N line and 219 ft. from W line of lease, Robert E. Winn Sur. ..... Drlg. 2,610 ft.
Shell Pet. Corp.'s No. 1 Sam B. Wells, 200 ft. out of NW cor. of the S 112-ac. tract, William Chisum Sur. ..... Set 151 ft. of 10-in. csg.
Shell Pet. Corp.'s No. 1 Wills, 200 ft. from N and 200 ft. from W of 182-ac. tract, W. P. Chisum Sur. ..... Rig up.
Henry Smith et al's No. 2 D. M. Peterson heirs, 150 ft. from SE line and 150 ft. from E line of 36-ac. tract, Isaac Ruddle Sur. ..... Set 6⅝-in. csg.; T. D. 3,676 ft.
Smith and Gulf Prod. Co.'s No. 1 D. M. Peterson, 330 ft. from S and 330 ft. from W line of 92.08-ac. tract, Isaac Ruddle Sur. ..... Washing in.
Smith and Gulf Prod. Co.'s No. 2 D. M. Peterson, 150 ft. from S and 150 ft. from E lines of 92.08-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,748 ft.; top Pecan Gap 2,575 ft.
Snowden and McSweeney's No. 1 Ben Laird, 179 ft. from E and 100 ft. from S lines of 143-ac. tract, Isaac Ruddle Sur. ..... Drlg. 3,431 ft.
Snowden and McSweeney's No. 2 Ben Laird, 150 ft. from E and 150 ft. from N of 143-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,842 ft.; top Pecan Gap 2,560 ft.
Sun Oil Co.'s No. 1 Ed Barker, 200 ft. from E and 200 ft. from S of 77-ac. lease, A. M. Ryan Sur. .... Rig up.
Sun Oil Co.'s No. 1 Beal, 200 ft. from W and 200 ft. from S of Beal 180-ac. tract, W. P. Chisum Sur. .... Location.
Stanolind Oil & Gas Co.'s No. 1 Jacking, 150 ft. from E and 150 ft. from S of 10-ac. tract, W. P. Chisum Sur. ..... Location.
Stanolind Oil & Gas Co.'s No. 1 W. R. Terrell, 327 ft. S and 275 ft. from W of 50-ac. lease, E. G. Sevier Sur. ..... Location.
Turman Oil Co.'s No. 1 Brightwell, 150 ft. from the N and E lines of 30-ac. lease, Robert E. Winn Sur. ..... Set 166 ft. of 10-in. csg.
Turman Oil Co.'s No. 2 W. P. Brightwell, 150 ft. out of NW cor. of 30-ac. lease, Robert E. Winn Sur. ..... Derrick.
W. D. Walton's No. 1 Brightwell, 150 ft. from N and E lines of the S 20 acres of W 50 acres of Brightwell 100-ac. tract, Robert E. Winn Sur. ..... Drlg. 2,965 ft.
Ward et al's No. 1 H. P. Leverett, 150 ft. out of the NW cor. of the 38-ac. tract, Meredith McCabe Sur. .. Derrick.
Weaver-Crim Corp.'s No. 1 Dave Ladd, 150 ft. from the S and W lines of tract N offset to Woodley's No. 1 Ladd, Henry Hobson Sur. ..... Derrick.
Woodley Pet. Corp.'s No. 1 George Thompson, 150 ft. from N line and center of E and W lines of Woodley 10-ac. lease of George Thompson 70-ac. tract, Robert E. Winn Sur. ..... Derrick.
Woodley Pet. Corp.'s No. 2 D. M. Peterson, 150 ft. from S line and 150 ft. from W line of 20-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,869 ft.
Woodley's No. 1 Dave Ladd, center of 2½-ac. tract, Henry Hobson Sur. ..... Drlg. 2,975 ft.

JOINER POOL—RUSK COUNTY

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N, 420 ft. from E of SE cor., B. Smith Sur. ..... Derrick.
Merrick Oil Co.'s No. 2 Thrash, 520 ft. from E, 1,855 ft. from S of 78-ac. tract, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,660 ft.
Anderson's No. 1 Giles, 1,900 ft. from E and 4,600 ft. from N of survey, M. J. Prue Sur. ..... Drlg. 1,850 ft.
G. S. Anderson's No. 2 Jobe, 150 ft. from N and 150 ft. from E of W 25-ac. tract, Juan Ximenes Sur. .... Drlg. plug; T. D. 3,585 ft.
Armstrong and Pitt's No. 1 Cooper, 2,150 ft. from W and 166 ft. from N of survey ..... Rig up.
Babcock Bros.' No. 1 Camp, 150 ft. from N, 171 ft. from E of 4-ac. tract, Juan Ximenes Sur. ..... Fishing for liner; T. D. 3,602 ft.
Bahan's No. 1 W. M. Camp, 150 ft. from N, 150 ft. from W of 25-ac. tract, Juan Ximenes Sur. ..... Preparing to swab; T. D. 3,635 ft.
Big Indian Oil Co.'s No. 1 Deason, 360 ft. from E and 4,100 ft. from S of survey, M. J. Prue Sur. .... Drlg. 1,395 ft.
R. L. Carter's No. 1 A. Thrash, 2,650 ft. from E and 6,250 ft. from S of survey, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,512 ft.
Consolidated Oil Co.'s No. 3 Jobe, 4,500 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. ..... T. D. 3,685 ft.
Consolidated Oil Co.'s No. 4 Jobe, 5,025 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. .... Set 6-in. csg.; T. D. 3,677 ft.
E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. ..... Drlg. 3,810 ft.
Cranfill & Reynolds' No. 1 Calvin Young, 275 ft. from E, 1,780 ft. from S of Young 300-ac. tract, M. J. Prue Sur. ..... Coring 3,697 ft.

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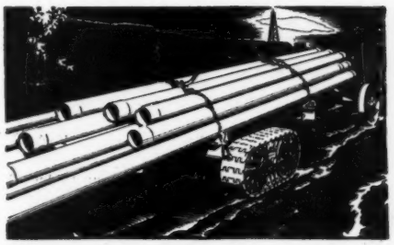
■ USE ATHEYS! . . . . . They're built to handle the big heavy loads. There's no excess maintenance costs due to overloading equipment not suited for heavy loads. ■ Instead, there are the economies of ATHEYS' extraordinary light-running qualities—the surety of having equipment delivered on time—the certainty that bad roads cannot mire important supplies—the economies that come from hauling twice the load with half the tractive power. ■ The man who hauls heavy loads without a full knowledge of ATHEY advantages is closing his eyes to tremendous savings. ATHEYS—built to haul heavy loads over good, bad or mud roads, give economies no other equipment can hope to accomplish.



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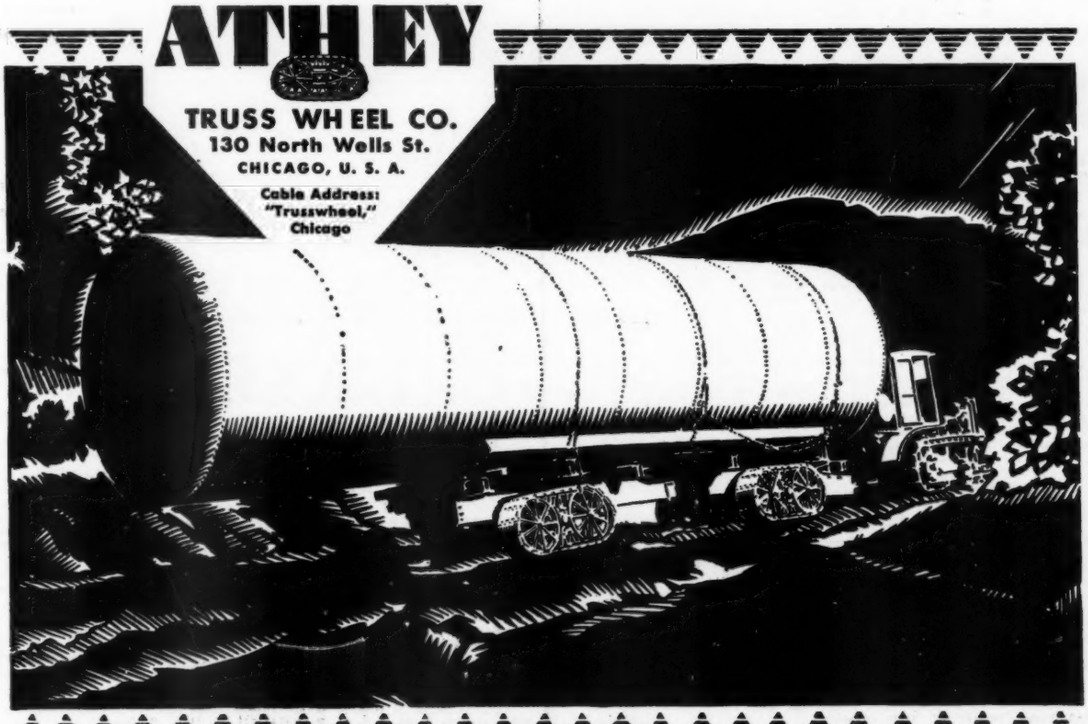

Dan Brooks, trustee's No. 1 Alford, 1,000 ft. from E and 200 ft. from S of Alford 100-ac. tract, J. R. Reel Sur. ..... Drlg. 2,668 ft.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E, 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.

East Texas Oil Co.'s No. 1 C. D. Ashby, 856 ft. N, 1,774 ft. from W of Ashby 119-ac. tract, Juan Ximenes Sur. ..... Shut down 2,160 ft.

Fitzsimmon's No. 1 Alford, 428 ft. from S and 4,500 ft. from W of survey, I. G. Parker Sur. ..... Drlg. 1,910 ft.

Foster and Deep Rock Oil Co.'s No. 1 Holland, 760 ft. from W and 4,760 ft. from N of survey, Juan Ximenes Sur. ..... Drlg. 3,050 ft.; top Pecan Gap 2,661 ft.

Frank Foster and Little's No. 2 Mayfield-Alford, 150 ft. from N and 150 ft. from E of 4.5-ac. lease, Juan Ximenes Sur. ..... Swabbing; T. D. 3,700 ft.

Greely and Baker's No. 1 Thrash, 2,600 ft. from W and 1,850 ft. from N of survey, Juan Ximenes Sur. ..... **Drlg. 2,200 ft.**

Griffith's No. 1 J. F. Lowe, 800 varas E of W line and 200 varas S of N line of 268-ac. tract, William Williams Sur. ..... Drlg. 2,975 ft.

Haynes et al's No. 1 T. R. M. Lee, 3,300 ft. from W and 5,000 ft. from S of survey, M. J. Prue Sur. ..... **Rig up.**

John W. Hoosier's No. 1 L. Taffaferro, 1,250 ft. from W and 3,250 ft. from N of survey, Juan Ximenes Sur. ..... Rig up.

Humble Oil & Refining Co.'s No. 1 Kangerga, 3,100 ft. from E line and 4,600 ft. from N line of survey, M. J. Prue Sur. ..... Drlg. 2,565 ft.

Humble Oil & Refining Co.'s No. 2 Kangerga, 4,400 ft. from E and 6,900 ft. from S of survey, M. J. Prue Sur. ..... Drlg. 2,966 ft.

H. L. Hunt's No. 1 Finney, 150 ft. from E and 150 ft. from S of survey, R. H. Pinney Sur. ..... Drlg. 2,853 ft.

H. L. Hunt's No. 1 Young, 150 ft. from N and 150 ft. from E of lease, M. J. Prue Sur. ..... Drlg. 2,690 ft.

Jones Drlg. Co.'s No. 1 Thrash, 660 ft. from N, 154 ft. from S of SE cor. of J. T. Brown 76.93-ac. tract, 600 ft. from S and 2,200 ft. from E of survey, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,668 ft.

K. & M. Oil Co.'s No. 1 Lum Taliaferro, 150 ft. from N and 1,092 ft. of Taliaferro 52-ac. tract, Juan Ximenes Sur. ..... Preparing to run tubing; T. D. 3,740 ft.

E. C. Laster's No. 1 Daisy Bradford, 150 ft. from E, 150 ft. from S of Lot 14, Juan Ximenes Sur. ..... Location.

Laster et al's No. 1 Maxwell, 3,000 ft. from E and 623 ft. from N of survey, I. G. Parker Sur. ..... Rig up.

Leonard Pet. Co.'s No. 1 Alford, 446 ft. E and 393 ft. S of SW cor. of T. J. Moore Sur., I. G. Parker Sur. ..... Set 6-in. csg.; T. D. 3,607 ft.

Lide-Rowe Oil Co.'s No. 1 Calvin Young, 150 ft. from E, 2,690 ft. from S of Young 393-ac. farm, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,651 ft.

Peter Lively et al's No. 1 Cox, 200 ft. N and 155 ft. W of SW cor. of T. L. Moore Sur., R. H. Pinney Sur. ..... Drlg. 2,775 ft.

Luling Oil & Gas Co.'s No. 1 Frederick, 4,300 ft. from W and 1,425 ft. from N of survey, Juan Ximenes Sur. ..... Coring 3,600 ft.

Madden et al's No. 1 Mose Mayfield, 960 ft. from the S and 160 ft. from W line of 154-ac. lease, Daniel Clark Sur. ..... Drlg. 2,654 ft.

Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartimas Sur. ..... Drlg. 2,700 ft.

Merrick Oil Co.'s (Gibson & Johnson) No. 1 Ashby, 125 ft. from E, 125 ft. from S of Ashby 45-ac. tract, Juan Ximenes Sur. ..... Fishing for drill stem; T. D. 3,659 ft.

Merritt et al's No. 1 Cooper, 155 ft. from E and 170 ft. from S of most easterly SE cor. of T. J. Moore Sur. ..... T. D. 2,975 ft.

Moss and Urschell's No. 1 Deason, 1,224 ft. S and 140 ft. E of NE cor. of Robert Dark 50 acres, M. J. Prue Sur. ..... **Spudding.**

Moss & Urschel's No. 1 Mayfield-Alford, 221 ft. from S, 200 ft. from W of 10-ac. lease, Juan Ximenes Sur. ..... Fishing 3,672 ft.

Moss & Urschel's No. 2 Mayfield-Alford, 211 ft. from S and 790 ft. from W of lease, Juan Ximenes Sur. ..... Set 6-in. csg.; T. D. 3,600 ft.

Nat Saddler's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... Shut down 1,305 ft.

Olsen Bros.' No. 2 Brown, 150 ft. from S, 150 ft. from E of 76.93-ac. tract, 4,900 ft. from N and 1,750 ft. from E of lease, M. J. Prue Sur. ..... Drlg. 3,018 ft.

Olsen Bros.' No. 3 Brown, 340 ft. S along W line of T. J. Brown 76-ac. from NW cor. of same and 200 ft. E at right angles to W line of M. J. Prue Sur. ..... Drlg. 3,107 ft.

Pharis and Sample's No. 1 Deason, 1,558 ft. E and 155 ft. S of SE cor. of H. Brooks tract in M. J. Prue Sur. ..... Derrick.

Perry et al's No. 1 Thrash, 2,050 ft. from W and 3,200 ft. from N of survey, Juan Ximenes Sur. ..... Set 6-in. csg.; T. D. 3,605 ft.

Petroleum Marketing Co.'s No. 1 Arnold, 350 ft. from E and 2,100 ft. from S of survey, M. J. Prue Sur. ..... Drlg. 1,560 ft.

A. W. Phillips' No. 1 Deason, 540 ft. from E and 550 ft. from S of D. F. and A. J. Deason tract, Juan Ximenes Sur. ..... Drlg. 2,100 ft.

Phillips Petroleum Co.'s No. 1 Alford, 3,700 ft. from W and 60 ft. from S of survey, I. G. Parker Sur. ..... Drlg. 2,660 ft.

Phillips Pet. Co.'s No. 1 Wilson, 142 ft. from E and 135 ft. from S of Phillips 51-ac. tract, M. J. Prue Sur. ..... Rig up.

Pilot's No. 2 Finney, 1,850 ft. from W and 1,500 ft. from N of survey, Juan Ximenes Sur. ..... Drlg. 3,075 ft.

Pioneer's (Moody-Seagraves) No. 1 Deason, 2,050 ft. from E and 1,525 ft. from S of survey, M. J. Prue Sur. ..... Drlg. 2,540 ft.

Pioneer Oil Co.'s No. 2 Thrash, 5,850 ft. from S and 1,900 ft. from E of survey, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,702 ft.

Pioneer Oil Co.'s No. 3 Thrash, 1,275 ft. N along E line of A. Thrash 71-ac. tract from SE cor. of same and 485 ft. W at right angles to E line, M. J. Prue Sur. ..... Derrick.

Pioneer Oil Co.'s No. 4 Thrash, 1,900 ft. from E and 4,725 ft. from S of survey, M. J. Prue Sur. ..... Location.

Pioneer Oil Co.'s No. 5 Thrash, 1,900 ft. from E line and 5,025 ft. from S line of survey, M. J. Prue Sur. ..... Drlg. 3,563 ft.

Robertson Drlg. Co.'s No. 1 Deason, 3,400 ft. from S and 1,800 ft. from W of survey, Juan Ximenes Sur. ..... Rig up.

Robert's No. 1 School Land, center of 4-ac. school tract on the middle S line between Gate 70-ac. and Selman 73-ac. tracts, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,680 ft.

Roeser and Pendleton's No. 1 Glenn Pool, 1,170 ft. from N and 200 ft. from E of 31-ac. lease, M. J. Prue Sur. ..... Derrick.

Rusk County Oil Co.'s No. 1 Robertson, 150 ft. from N along W line of George Guthrie Sur. from SE cor., 150 ft. W of E line of Robertson 20-ac. tract, R. H. Pinney Sur. ..... Fishing 1,285 ft.

J. Rusk et al's No. 1 W. B. Thompson, 150 ft. out of SW cor. of 59-ac. Thompson tract, John Dougherty Sur. ..... Set liner; T. D. 3,707 ft.

Shaw Oil Co.'s No. 1 Robertson, 1,750 ft. from W and 3,050 ft. from S of survey, Juan Ximenes Sur. ..... Shut down 900 ft.

Shaw Oil Co.'s No. 1 Deason, 500 ft. from E and 4,100 ft. from S of survey, M. J. Prue Sur. ..... Drlg. 3,200 ft.

Sinclair Oil & Gas Co.'s No. 1 Daisy Bradford, 150 ft. from N and 150 ft. from E of Daisy Bradford 35-ac. lease, Juan Ximenes Sur. ..... Preparing to swab in; T. D. 3,710 ft.

Snetcher and Pittman's No. 1 Cox, 1,390 ft. from N and 165 ft. from W of 129-ac. Cox farm, R. H. Pinney Sur. ..... Set 6-in. csg.; T. D. 3,658 ft.

Stokes et al's No. 1 Mrs. M. M. Talley, 4,100 ft. from W and 1,050 ft. from N of survey, ... Moving in rig.

Sun Oil Co.'s No. 1 S. A. Selman, 150 ft. from N and 150 ft. from E of 50-ac. tract, M. J. Prue Sur. ..... Spudding.

E. R. Tennant's No. 2 Brooks, 1,300 ft. from E and 6,500 ft. from S of survey, M. J. Prue Sur. ..... Set 6⅝-in. csg.; T. D. 3,639 ft.

Tidal Oil Co.'s No. 2 Holland, 150 ft. from N and 197 ft. from E of lease, Juan Ximenes Sur. ..... Run tubing; T. D. 3,748 ft.

Turman's No. 1 Young, 4,700 ft. from S and 3,000 ft. from E of survey, M. J. Prue Sur. ..... Preparing to set liner; T. D. 3,700 ft.

Vitek's No. 1 Jobe, 2,950 ft. from W and 3,260 ft. from N of survey, Juan Ximenes Sur. ..... Derrick.

Ward Oil Co.'s No. 1 Finney, 163 ft. from E and 150 ft. from S of survey, F. Cordova Sur. ..... Derrick.

Ward Oil Co.'s No. 1 Cox, 1,700 ft. from W and 1,450 ft. from N of survey, R. H. Pinney Sur. ..... Rig up.

Williams and Dunning's No. 1 Young, 4,400 ft. from E and 2,450 ft. from S of survey, M. J. Prue Sur. ..... Drlg. 2,692 ft.

SMITH COUNTY

Big Indian Oil Co.'s No. 1 Mills, 1,045 ft. E along S line of C. Mills 67.8-ac. farm, SW cor. of same and 710 ft. N at right angles to S line of 67.7 acres, J. Jordan Sur. ..... Derrick.

G. B. Bunte, trustee's No. 1 A. S. Jarvis, 150 ft. from S and 150 ft. from W of 267-ac. tract, Juan Vargus Sur. ..... Rig up.

Howard Petroleum Co.'s No. 1 Lee Holt estate, 6,000 ft. from N and 1,000 ft. from S of survey, Barnes Clark Sur. ..... Moving in rig.

Joiner et al's No. 1 W. W. Wright, 847.5 varas from E and 647 varas from S of NW Wright 225-ac. tract, Van Sickle Sur. ..... Drlg. 2,100 ft.

Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,400 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,681 ft.

UPSHUR COUNTY

Arcadia Refining Co.'s No. 1 R. S. Johnson, 1,000 ft. from N and 1,000 ft. from E of survey, J. H. Mallory Sur. ..... Derrick.

Arcadia Refining Co.'s No. 1 Johnson, 1,000 ft. from N and 1,000 ft. from E of survey, J. H. Mallory Sur. ..... Derrick.

Brennan and Wood's No. 1 Robertson, center of Robertson 41ac. tract, Ira Stephenson Sur. ..... Derrick.

Brenham and Wood's No. 1 W. G. Robertson, 1,850 ft. from N and 700 ft. from W of survey, C. Ira Stephenson Sur. ..... Derrick.

Mudge Oil Co.'s No. 1 J. D. Richardson, 150 ft. from E and 150 ft. from S of most eastern SE cor. of 100-ac. tract, David Ferguson Sur. ..... Derrick.

Penn Oil Co.'s No. 1 Gage (R. W. Maberry), 700 ft. from S and 1,000 ft. from W of Gage 100-ac. tract, J. B. Davenport Sur. ..... Drlg. 2,648 ft.

E. R. Perkins et al's No. 1 Kay, 660 ft. from S and 660 ft. from W of survey, Thomas J. Elliott Sur. ..... Moving in rig.

VAN ZANDT COUNTY

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abandoned.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E line of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abandoned.

J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Fishing 5,160 ft.

H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 3,098 ft.

Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. ..... Temp. abnd. 2,987 ft.

Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.

Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... Shut down 2,300 ft.

Nell McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Shut down 2,450 ft.

Pure Oil Co.'s No. 2 A. F. Magee, 250 ft. N of most northerly S line and 250 ft. W of E line, Nacogdoches School Land ..... Shut in; testing; T. D. 2,927 ft.

Pure Oil Co.'s No. 2 Crim, 250 ft. from S and 200 ft. from E of 40-ac. lease in John Walling Sur. ..... Coring 2,938 ft.

Pure Oil Co.'s No. 5, 200 ft. E of W line and 250 ft. N of S line of Tract No. 3, John Walling Sur. ..... Derrick.

Pure Oil Co.'s No. 2 R. E. Cade, 200 ft. W of E line and 250 ft. N of S line of lease, John Walling Sur. ..... Location.

Pure Oil Co.'s No. 2 A. G. Tunnell, 250 ft. N of S line and 200 ft. W of E line, John Walling Sur. ..... T. D. 2,942 ft.; testing; shut in.

Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.

Pure Oil Co.'s No. 4 W. F. Swain, 250 ft. S of N line and 200 ft. W of E line of lease, Mund Gross Sur. .. Derrick.

Pure Oil Co.'s No. 6 W. T. Jarman, 344 ft. W of E line and 250 ft. S of N line of 8-ac. tract, Nacogdoches County School Land ..... Testing 2,956 ft.

Pure Oil Co.'s No. 3 Ella York, 250 ft. S of N line and 250 ft. E of W line, John Walling Sur. ..... Shut down 2,455 ft.

Pure Oil Co.'s No. 2 H. C. Gilbert, 1,003 ft. N of S line and 200 ft. E of most easterly W line of lease, Mund Gross Sur. ..... Cement setting 2,902 ft.

Pure Oil Co.'s No. 3 A. G. Mayfield, 250 ft. S of N and 250 ft. W of E line of lease, Nacogdoches School Land Sur. ..... Cement setting; T. D. 305 ft.

Pure Oil Co.'s No. 4 M. F. Shirley, 491 ft. E of W line and 90 ft. N of S line of lease, John Walling Sur. ..... Location.

Pure Oil Co.'s No. 2 Brawner, 250 ft. N of S line and 250 ft. W of E line of lease, John Walling Sur. .... Location.

Pure Oil Co.'s No. 2 Shivers, 200 ft. S of N line and 200 ft. E of W line of lease, John Walling Sur. .... Location.

Pure Oil Co.'s No. 4 Neills, 581 ft. E of W line and 225 ft. S of N line of lease, James Rose Sur. ..... Location.

Pure Oil Co.'s No. 3 J. C. Stewart, 375 ft. N of S line and 150 ft. W of E line of lease, Mund Gross Sur. .. Location.

Pure Oil Co.'s No. 3 Ella York, 200 ft. W of E line and 250 ft. N of S line of lease, John Walling Sur. ..... Location.

Roy Stumpff's No. 1 Riggs, 169 ft. from E and 155 ft. from S of 3-ac. tract, William Daniel Sur. ..... Derrick (rotary).

The Texas Company's No. 3 White, 250 ft. S of N line and 250 ft. E of W line of lease, Nacogdoches School Land Sur. ..... Location.

Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Shut down 1,028 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

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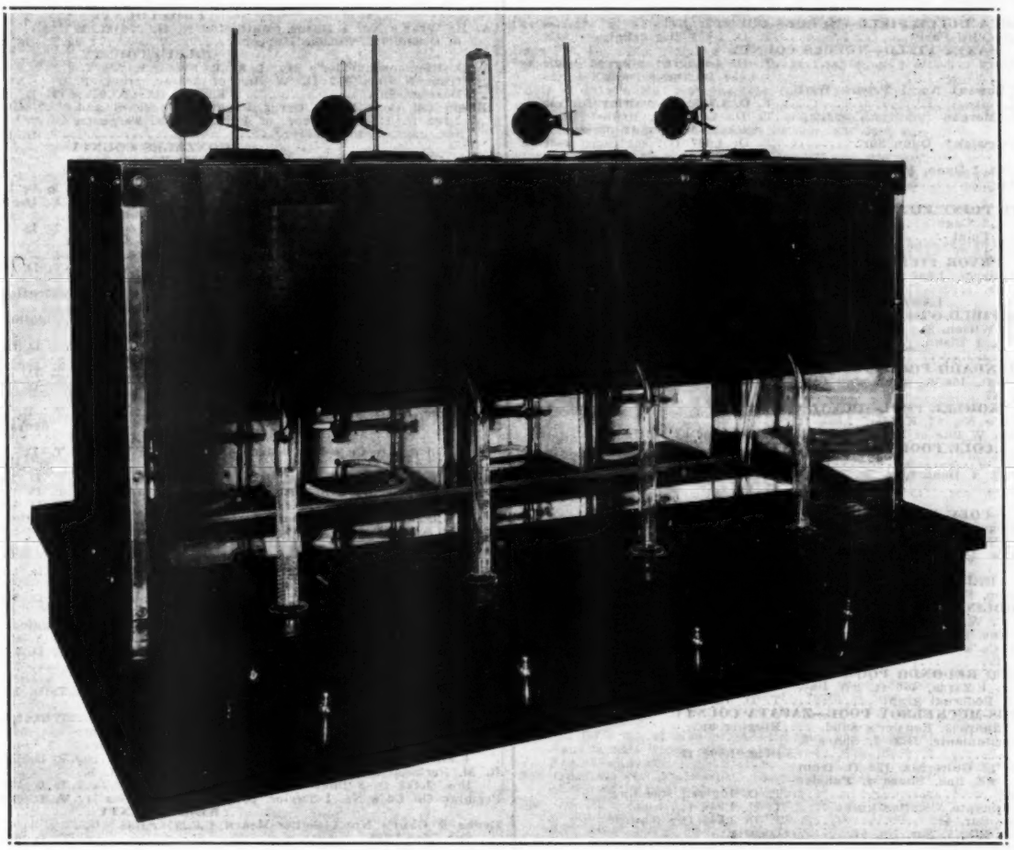

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"A FEW GOOD DISTRICTS OPEN FOR RELIABLE DISTRIBUTORS"

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 44)

United Prod. Co.'s No. 33 Ray ..... T. D. 412 ft.; drlg.
United Prod. Co.'s No. 35 Ray, 1,100 ft. east of No. 34, T. Hanson Sur. ..... T. D. 3,965 ft.; set csg.
United Production's No. 36 Ray, Thomas Hanson Sur. ..... T. D. 3,275 ft.; drlg.

SLICK POOL—GOLIAD COUNTY

Slick estate's No. 1 Riedel, W. C. Brown Sur., 1,830 ft. S of No. 1 Poetter ..... T. D. 3,300 ft.; drlg.

LASATER POOL—BOOKS COUNTY

Houston Oil Co.'s No. 3 Wormser, Maguella Sur. ..... T. D. 4,433 ft.; drlg.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 3 Dunning, M. B. Kilvin Sur. ..... Moving in rig.
Houston Oil Co.'s No. 4 B. L. and C. C. ..... T. D. 5,065 ft.; drlg.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities Co.'s No. 6 Chittim, Sec. 116, Blk. 7, L&G.N. Sur. ..... T. D. 4,998 ft.; drlg.
Texas Gas Utilities' No. 7 Chittim, L&G.N. Sur. ..... T. D. 3,130 ft.; lost hole; skidding rig.

AGUA DULCE FIELD—NUECES COUNTY

Houston Oil Co.'s No. 1-B Ollie Furi ..... T. D. 5,900 ft.; drlg.

SAXET FIELD—NUECES COUNTY

O. C. Best et al's No. 1 Boory ..... T. D. 4,220 ft.; plugged back to 4,050 ft. and set csg.
Houston Oil Co.'s (Andy Bowen) No. 1 Prieur, H. B. Sheppard Sur. ..... T. D. 1,465 ft.; waiting for csg.
Houston Oil Co.'s No. 2 R. Morgan ..... T. D. 4,093 ft.; drilled in; gas with 1,600 pounds pressure.
Moody-Seagraves' No. 1 Sedgwick, . Dunn Sur. ..... T. D. 4,097 ft.; set csg.; waiting on cmt.
W. L. Pearson Properties' No. 1 Dunn, 300 ft. S of Bay... Shut down 2,600 ft.
Saxet Oil Co.'s No. 7 Dunn ..... T. D. 4,296 ft.; estimated 100 bbls. oil.

WHITE POINT FIELD—SAN PATRICIO COUNTY

United Production Co.'s No. 3 Cage ..... T. D. 2,220 ft.; drlg.
Saxet Oil Co.'s No. 4 White Point ..... T. D. 3,494 ft.; core showed 1 ft. oil sand; drlg.

PRYOR FIELD—ZAVALA COUNTY

Texas Gas Utilities' No. 4 Pryor, 1,000 ft. NW of No. 3 Pryor ..... Location.

LAREDO DISTRICT

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Pet. Corp.'s No. 2 Wilson, Sur. 134 ..... T. D. 2,377 ft.; comp. 750 bbls. oil.
Frasher-Breeding et al's No. 2 Bishop Cattle Co., Sur. No. 135 ..... T. D. 2,316 ft.; coring for sand.

RANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 ..... Derrick.

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ..... T. D. 5,700 ft.; drlg.

COLE POOL—WEBB COUNTY

O. W. Killam's No. 4 Cuellar ..... T. D. 3,080 ft.; abnd.
South Texas Prod. Co.'s No. 4 Benavides, M. Arispie Sur. ..... T. D. 1,709 ft.; comp. 10,000,000 ft. gas.

COLE POOL—DUVAL COUNTY

Southern Oil Co.'s No. 2 Kings-Harper, 1,794 ft. E line, 728 ft. N line of Sur. 323 ..... Location.
Gus Pape et al's No. 1 Juan Benavides, Blk. 35, Mesquite grant ..... Spudded in.

REISER POOL—WEBB COUNTY

O. W. Killam's No. 1 Johnson, Sur. 1,617 ..... T. D. 2,808 ft.; drlg.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ..... T. D. 4,212 ft.; drlg.
Carolina-Texas Oil & Gas Co.'s No. 9 Barnsley Sur. No. 268 ..... T. D. 150 ft.; drlg.

CHARCO REDONDO POOL—ZAPATA COUNTY

Midwest Public Utilities' No. 1 Zarza, 450 ft. SW line, 450 ft. SE line, Blk. 33, Pedernal grant ..... T. D. 1,598 ft.; standing.

JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

O. & A. Co.'s No. 3 Garcia, Share 3, Fansler's Subd. .... Rigging up.
O. W. Killam's No. 5 A. Bustamente, Blk. 7, Share 5, Fansler's Subd. ..... Drlg. 1,000 ft.
Allied Oil & Gas Co.'s No. 12 Guiterrez, 750 ft. from NE line, 3,663 ft. from SE line, Share 4, Fansler Partition, Comitas grant ..... T. D. 100 ft.; standing.
K. & P. Oil Co.'s No. 4 Bustamente, Comitas grant ..... T. D. 1,998 ft.; abnd.
F. H. Meyers' No. 1 Trevino, Sur. 412 ..... T. D. 1,368 ft.; testing.
J. I. Newton's No. 3 Trevino, Blk. 7, Sur. No. 66 ..... Location.
S. R. C. Oil Co.'s No. 5-D Montemayor ..... T. D. 1,492 ft.; abnd.

CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 40-C Cuellar, Sur. No. 278 ..... Derrick.
O. W. Killam's No. B-42 Cuellar, Sur. No. 277 ..... T. D. 1,435 ft.; drlg.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 44)

Hicks & Patton's No. 1 Billingsley, B. Q. Hadley Sur., 1½ miles N Grayburg's No. 1-A Kimball ..... T. D. 3,200 ft.; drlg.
Catlell & O'Neill's No. 1 Miller, Ronald Hotchkiss Sur... T. D. 2,600 ft.; drlg.
Mauldin et al's No. 1 Kimball, 300 ft. S Grayburg's No. 1-A Kimball, S. Winship Sur. ..... T. D. 3,544 ft.; waiting on csg.
E. S. Price's No. 1 Weiss, 200 ft. each way out of NW cor. of B.&B. Sur. ..... T. D. 4,423 ft.; abnd.
E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. ..... T. D. 4,546 ft.; abnd.
E. S. Price's No. 3 Weiss, 900 ft. due NE of No. 1 Weiss... Abandoned.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Rangley Subd. of C. Miller ranch, Uranga Sur. ..... T. D. 4,500 ft.; abnd.
Humble and Huribut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. ..... T. D. 5,077 ft.; abnd.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. ..... Location.

BEXAR COUNTY

Kaye & Uhl's No. 1 Rhode, C. Texada Sur. No. 133..... T. D. 665 ft.; shut down.
Long & Craig's No. 1 Sandemer ..... Location.
McElroy-Hall and Croach's No. 1 Sweeney, 450 ft. NW line, 700 ft. W line of tract, F. R. Hernandez Sur..... Temporarily abandoned.
J. M. Russell's No. 1 F. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. ..... T. D. 1,024 ft. in chalk; shut down for csg.
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio ..... T. D. 702 ft.; shut down.
Russell & Moore's No. 3 Mills, Angel Navarro Sur. No. 5 ..... T. D. 940 ft.; shut down.
Ueckert et al's No. 1 Palfrey, 1,000 ft. S and W lines of farm ..... T. D. 1,809 ft.; standing.
S. M. Terrell et al's No. 1 A. Beadom, 1,100 ft. from E line, 12,000 ft. from N line of John Barber Sur.... Location.
F. W. Tong's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montes Sur. ..... T. D. 1,260 ft.; shut down.
Bowman & Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. ..... T. D. 2,600 ft.; plugged back to 600 ft.; will put on pump.
Waggoner & Stieren's No. 1 S.A.S.I.F., G. Najar Sur..... T. D. 1,145 ft.; abnd.

CALDWELL COUNTY

Callihan et al's No. 3 W. H. Callihan, 70 ft. N, 65° E of No. 2 ..... T. D. 2,525 ft.; abnd.
Mills et al's No. 2 McMahon, 50 ft. E of No. 1 ..... T. D. 930 ft.; set csg.; waiting on cement.
Neuhaus et al's No. 1 Moore, W. Clinton Sur. ..... T. D. 2,325 ft.; shut down.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 718 ft.; drlg.

DEWITT COUNTY

H. T. Roe's No. 1 Leinhardt ..... T. D. 2,170 ft.; abnd.
Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur..... Rigging up.

DUVAL COUNTY

O'Byrne et al's No. 1 Well, B.S.&F. Sur. No. 568 ..... T. D. 1,755 ft.; drlg.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 8,005 ft.; drlg.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur... Location.

FAYETTE COUNTY

Elam & Reynolds' No. 1 Florence, M. Muldoon Sur. No. 13 ..... T. D. 1,040 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hupzor ..... T. D. 3,708 ft.; running csg.

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. ..... T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... T. D. 5,267 ft.; standing.

GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. ..... T. D. 2,560 ft.; abnd.
Linden Pet. Co.'s No. 1 Cowley, James Smith Sur..... T. D. 4,400 ft.; drlg.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. ..... T. D. 4,508 ft.; drlg.

GUADALUPE COUNTY

O. K. Emerson's No. 1 C. A. Phillips, C of 80-ac. tract, Velda Sur. ..... T. D. 75 ft.; shut down.
San Antonio Oil & Royalty Co.'s No. 1 Dilrell, H. & T.C. Sur. ..... Location abandoned.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. ..... Rigging up.

HAYS COUNTY

J. C. Jones et al's No. 1 Byder, John Ingram Sur..... T. D. 830 ft.; set csg.

JIM HOGG COUNTY

Magnolia Pet. Co.'s No. 1 Cuellar, Sur. No. 575..... T. D. 2,671 ft.; drlg.
Peterman & Minahan's No. 1 Palacios, Sur. No. 231..... T. D. 700 ft.; drlg.
J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A, Hinojosa Sur. ..... T. D. 2,888' ft.; preparing to deepen.

JIM WELLS COUNTY

Carsil Oil & Gas Co.'s No. 1 McGill, D. Baldwin Sur..... T. D. 2,690 ft.; comp. 35,000,000 ft. dry gas.
R. H. Ewell's No. 1 Doering, Blk. 6, Seefield Subd..... T. D. 3,450 ft.; testing show gas.
Gulf Prod. Co.'s No. 1 Shaeffer, J. Pointevent Sur. No. 1.. T. D. 2,936 ft.; drlg.
Prairie Lee. Prod. Co.'s No. 1 Oppenheimer..... T. D. 1,000 ft.; shut down.
Smith Clark Co.'s No. 1 Cuero Cattle Co. ..... Location.
Stewart & Blair's (E. W. Ogden) No. 1 Farris..... T. D. 2,123 ft.; setting csg.

KARNES COUNTY

J. F. Morrissey et al's No. 1 Rigsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCoull Sur..... T. D. 3,000 ft.; abnd.
A. Edmiston's No. 1 Cochran, 150 ft. from S line, 500 ft. from E line of tract, D. B. McConnell Sur..... T. D. 1,010 ft.; temp. abnd.
Karnes County Development Co.'s No. 1 Hubbard, 3 miles W of Kennedy ..... Rigging up.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur..... T. D. 1,010 ft.; shut down.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 1,165 ft.; shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale..... T. D. 2,450 ft.; straightening hole.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia..... T. D. 1,600 ft.; shut down.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line..... T. D. 706 ft.; standing.
Permian Oil Co.'s No. 1 Taylor, Sec. 18, G.B.&G. Sur. ... T. D. 100 ft.; shut down.

KERR COUNTY

Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&R.G.N.G. Sur. No. 1,605 ..... T. D. 900 ft.; drlg.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28 ..... Rigged up and shut down.

KINNEY COUNTY

Marlon Oil Co.'s No. 2 Jim Clamp..... T. D. 1,389 ft.; temp. abnd.
Magnolia Petroleum's No. 1 Wardlaw, Meliton Valdez grant ..... T. D. 5,280 ft.; abnd.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur..... T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges..... T. D. 2,512 ft.; shut down; hole full water.

LASALLE COUNTY

Fred W. Vales' No. 1 Coleman, 200 ft. from S and E lines of SW, Sec. 514, B.S.&F. Sur. ..... T. D. 40 ft.; standing.

LAVACA COUNTY

Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Hueser Sur. ..... T. D. 3,340 ft.; fishing.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridget Fadden Sur., 3 miles E from George West... T. D. 4,290 ft.; abnd.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ..... T. D. 5,386 ft.; standing.
Houston Oil Co.'s No. 1-A Parr, John McMullen grant... T. D. 2,010 ft.; drlg.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... T. D. 2,145 ft.; standing.
Southern Exploration Co.'s No. 1 Ponder, B.S.&F. Sur., in eastern Live Oak ..... T. D. 4,139 ft.; tested salt water; drlg. deeper.
Sid Keoughan's No. 1 C. E. Terrell, 600 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ..... T. D. 2,840 ft.; shut down.

LEE COUNTY

A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T. D. 2,313 ft.; drlg. hard shale.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur..... T. D. 1,495 ft.; drlg.

McLENNAN COUNTY

C. E. Groone et al's No. 1 League ..... T. D. 1,230 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur..... T. D. 632 ft.; standing.
Neuhaus and others' No. 1 J. O. Massey, Sur. No. 472.... T. D. 1,394 ft.; drlg.
Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur... T. D. 1,200 ft.; standing.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay..... Plugged back to 1,625 ft.; may make small well.
J. H. Hickey's No. 1 Odon, H. Castro Sur. No. 175..... T. D. 820 ft.; shut down.
Donaldson Oil & Gas Co.'s No. 2 Adams..... T. D. 130 ft.; standing.
C. H. Florian et al's No. 1 Henry Meyer..... T. D. 200 ft.; standing.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 518 ft.; standing.
M. Eskridge et al's No. 1 Medina Valley Irrigation..... T. D. 1,550 ft.; shut down.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine..... T. D. 2,789 ft.; shut down.
Sunflower Oil Co.'s No. 1 Mofield, J. Brothag Sur. No. 532 ..... T. D. 1,212 ft.; standing.

Yancey Development Co.'s No. 1 Faseler Sur. No. 801....T. D. 290 ft.; drlg.

MILAM COUNTY

Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ....T. D. 2,100 ft.; shut down.
Red Bank Oil Co.'s No. 1 Foster, A. G. Berry Sur.....Derrick.
McMasters and Pomeroy's No. 1 Pluger, J. J. Acosta Sur..T. D. 1,136 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward....T. D. 2,933 ft.; drlg.
J. E. McKee et al's No. 1 Littleton, 150 ft. from N and 225 ft. from W line of lease, C. Chevalier Sur.....T. D. 510 ft.; shut down.
Peggie Brothers' No. 1 M. Reed....T. D. 650 ft.; shut down.

REAL COUNTY

Evans & Sprinkle's No. 1 J. M. Auld, H.E.&W.T. Sur. No. 15 ....T. D. 4,004 ft.; standing.
McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175.....T. D. 1,390 ft.; cleaning out cavings at 1,170 ft.
Gant-Kilgore and Evans' No. 1 A. D. Auld, C.C.S.D.& R.G.N.G. Sur. No. 23....T. D. 1,585 ft.; having water trouble.

STARR COUNTY

Los Olmos Oil Co.'s No. 2 Kelsey-Bass, Blk. 6, Porcion 77 ....T. D. 881 ft.; standing.
Kush & Duerkson's No. 1 Kelsey-Bass, Blk. 9, Porcion 75, Carmargo Sur....T. D. 856 ft.; standing.
Menyard et al's No. 1 Sealbury, 150 ft. from E line, 6,550 ft. from N line, Share 5, Porcion 75, Jurisdiction of Carmargo ....T. D. 349 ft.; waiting on cement.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neill Sur., Abstract 211 ....T. D. 4,020 ft.; shut down.
Saxet Oil Co.'s No. 1 Carroll, 8 miles N of Gregory.....Derrick.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur.....T. D. 1,800 ft.; shut down.
F. W. Fuch's No. 1 Ballersted, A. Alexander Sur.....Derrick.
Franklin et al's No. 1 Wilson, A. Alexander Sur.....Derrick.
Waldron et al's No. 1 Cook, D. H. Minor Sur., 8 miles SW of Austin....T. D. 645 ft.; drlg. shale.
Taylor Temple Oil Co.'s No. 1 W. Smith, L. Kimbro Sur...T. D. 150 ft.; drlg.
Bohls & Wilson's No. 1 Norton, J. Cole Sur.....Derrick.

UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611....T. D. 2,710 ft.; temp. abnd.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde....T. D. 1,610 ft.; temp. abnd.

WEBB COUNTY

Cole Pet. Co.'s No. 4 Benavides, Sur. No. 1,601.....T. D. 300 ft.; drlg.

WILLIAMSON COUNTY

Fritz Fuchs' No. 1 L. W. Fuchs, Cartwright Sur. .....Top chalk 1,414 ft.; T. D. 2,056 ft.; drlg.
Wilburn et al's No. 1 Caroline Hurts, P. Coursey Sur.....T. D. 1,327 ft.; shut down.
Wilson et al's No. 1 Walker ....T. D. 2,260 ft.; shut down.

WILSON COUNTY

Stover & Wren's No. 1 John Ruess, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ....T. D. 1,100 ft.; shut down.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur.....Rigging up.
Benson Oil Co.'s No. 1 S. Vela, W cor. of Blk. 12, Sur. No. 259 ....T. D. 850 ft.; drlg.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant ....T. D. 1,178 ft.; showing gas.
John Poppas Pool, Inc.'s No. 1 Flores, 2,977 ft. SE line, 6,000 ft. Rio Grande River, Porcion 35.....Derrick.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2....T. D. 2,075 ft.; drlg.
National Oil Co.'s No. 1 Zapata Trust Estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 ....T. D. 690 ft.; drlg.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant....T. D. 1,148 ft.; standing.
Mackenzie & Talmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3....T. D. 520 ft.; standing.

ZAVALA COUNTY

Carl Cromwell's No. 1 Whitecotton, C of NW, Sec. 1, A.P.&M. Sur. ....Location abnd.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 220 ft. from NE cor. Sur. No. 13....T. D. 3,215 ft.; temp. abnd.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 42)

H. H. Alvord, Jr.'s No. 2 Sabine Lbr. Co., 330 ft. S, 250 ft. E, NW cor. SW NE, Sec. 1-7-12....Set 10-in. 40 ft; drlg. 1,800 ft.
Ohio Oil Co.'s No. 7 Bowman-Hicks, 250 ft. N, 1,370 ft. E, SW cor. NW NE, Sec. 2-7-12....Flowing 50 bbls. by heads 2,387 ft.
Ohio Oil Co.'s No. 8 Bowman-Hicks, 330 ft. N, 330 ft. E, NW cor. NE, Sec. 2-7-12....Rigging up.
H. W. Perritt's No. 3 Bowman-Hicks, 244 ft. S, 122 ft. E, NW cor. SE SW, Sec. 2-7-12....W.O.S.R; hole full fluid.
Sabine Royalties Co., Inc.'s No. 1 Hill, 400 ft. S, 200 ft. E, NW cor. NE NE, Sec. 5-7-11....Began drlg. Mar. 30; set 10-in. 105 ft.
Triangle Pet. Co.'s No. 2 Sabine Lbr. Co., 330 ft. N and E, SW cor., Sec. 36-8-12....Derrick.
J. C. Walton's No. 1 Sabine Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW, Sec. 11-7-12....S.D. fuel 2,360 ft.

WEBSTER PARISH—SAREPTA

Cassidy & Davis' No. 1 Nickerson, 300 ft. S, 300 ft. W, NE cor. SW, Sec. 29-23-10....S.D. 150 ft.

ARKANSAS

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16....Hole clean; arranging to pump 2,092 ft.

OUACHITA COUNTY—STEPHENS

J. D. Reynolds' No. 1 Grayson, Sec. 21-15-15 (Stephens Townsite) ....1,500 ft. fluid in hole; W.O.S.R. 2,197 ft.
Wesson & Bonner's No. 1 Wesson, 500 ft. W, 175 ft. N, SE cor. SW NW, Sec. 22-15-19....Trying to shut off wtr. flow.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 3 Furlough, 408 ft. N, 192 ft. E, SW cor. NW NE, Sec. 13-17-14....Set 6⅝-in. 2,987 ft; T.D. 3,013 ft.
Ohio Oil Co.'s No. 2 Raulston, 330 ft. S, 330 ft. E, NW cor. NW SE, Sec. 12-17-14....Location abd; will not drill.

UNION COUNTY—EL DORADO

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15....S.D. funds; T.D. 2,186 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 14-19-15 ....S.D; W.O. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1-E Thompson, 330 ft. N, 330 ft. W, SE cor. NW NE, Sec. 10-18-13....Set 6⅝-in. 3,538 ft; T.D. 3,544 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13....Location.
Marine Oil Co.'s No. 4-B Thompson, Sec. 10-18-13....Drlg. 2,650 ft.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, [illegible] ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur....Location.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 13 Louis Werner, 1,590 ft. S, 600 ft. W, SE cor. Carrie Steele tr., B. C. Jordan Sur. ....Drlg. lime 4,176 ft.
Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur.....S.D. 2,600 ft.
Dillon & Bradham's (was W. G. Banks et al's) No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur....S.D. 1,500 ft; top Pecan Gap.
S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. ....S.D; W.O. 3,335 ft.
C. D. Neff et al's No. 6 Brumble, B. C. Jordan Sur.....Derrick.
Knox et al's No. 1 Dunham, Chas. Haley Sur. ....S.D. 3,190 ft.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lease, in B. C. Jordan Sur....Location.

MISSISSIPPI

HINDS COUNTY

E. B. Love et al's No. 1 Payne, Sec. 27-6-1e....Bailing; no results in chalk 2,537 ft.
Cleve Love et al's No. 2 Ridgeway-McGhee, SE cor. NW, Sec. 2-5-1e....Rigging up.
Love Pet. Co.'s No. 1 Maley, Sec. 15-5-1e....S.D. 2,498 ft; W.O.
Love Pet. Co.'s No. 2 Maley, 700 ft. E, 1,100 ft. S, NW cor. NE NW, Sec. 15-5-1e....Set 7-in. 2,458 ft; waiting on cmt.
Pirtle & Flint's No. 1 Payne, 450 ft. W, 50 ft. N, SE cor. SW SW, Sec. 27-6-1e....Coring chalk 2,546 ft.

RANKIN COUNTY

Miss. G. & F. Co.'s No. 1 Hanna, SW cor. SW NE, Sec. 14-5-1e ....Derrick.
Pioneer O. & G. Co.'s No. 1 Ragland, NE cor. SW SW, Sec. 12-5-1e ....Topped black shale 2,296 ft; set 6⅝-in. 2,370 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 47)

Sun Oil Co.'s No. 14 Wilburn fee, east ....Drlg. sand and shale showing oil 2,870 ft.
The Texas Company's No. 2 Winfree, west flank, W. D. Smith Sur., 264 ft. N, 50 ft. W at right angles out of SE cor. of lease ....T. D. 4,063 ft.; reaming to straighten hole.
The Texas Company's No. 3 Winfree, west flank, W. D. Smith Sur., 478 ft. N and 50 ft. W at right angles ...Drlg. sand and shale 4,418 ft.
The Texas Company's No. 5 Wilburn, east flank, Wm. Hodges Sur., 400 ft. SW of No. 4 Wilburn and 50 ft. from SE line of lease ....Rig.
Yount Lee Oil Co.'s No. 10 Woodward, southeast .....Drlg. shale 5,968 ft.
Yount Lee Oil Co.'s No. 15 Chambers (D.D.), Wm. Bloodgood Sur., 50 ft. from E line and 355 ft. from N line tract....Rig up to deepen 4,713 ft.
Yount Lee Oil Co.'s No. 19 Chambers, south flank, Wm. Bloodgood Sur., 10 ft. N Sun Oil Co.'s No. 8 ..Drlg. sand and lime 1,690 ft.
Yount Lee Oil Co.'s No. 2 Winfree, west flank, W. D. Smith Sur., 50 ft. from S line and 100 ft. from E line of tract ....Drlg. hard lime 5,085 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 12 Payne, Wm. White Sur., 500 ft. SE of No. 9 ....Set 138 ft. screen 3,555 ft.; swabbing.
Humble & Valley's No. 1 Martha Remmert ....Location.

HUMBLE—HARRIS COUNTY

LaRue, trustee's No. 1 Crane, northwest ....Derrick standing.
M. LaRue's No. 1 Tuffly, northwest ....Gumbo 1,465 ft.; shut down.
Rio Bravo Oil Co.'s No. 1 Westheimer, John Brown Jones One-Third League, 800 ft. from E line and 100 ft. from S line of Blk. 1, in Lot 48, Westheimer Subd. ....Location.
Sun Oil Co.'s No. 22 Bender, Adams Sur., 200 ft. NE at right angles from midway point on line between Nos. 3 and 20....Drlg. shale 1,890 ft.
Sun Oil Co.'s No. 23 Bender, Adams Sur., 300 ft. NW of No. 21 in line with Nos. 21 and 15....Drlg. gumbo 926 ft.
Sun Oil Co.'s No. 1 O'Connor, Adams Sur., 75 ft. from S line and 75 ft. from E line of 1-ac. tract by S.P. depot ....Location.
Southern Coastal Oil Co.'s No. 2 Perkins ....Total depth 2,904 ft.; set screen 2,898 ft.; bailing.
Sun Oil Co.'s No. 1 Beck, west flank ....Drlg. hard shale 4,847 ft.
The Texas Company's No. 29 G.O.&G. (workover), J. B. Stevenson Sur. ....Total depth 3,185 ft.; sidetracking 3,072-88 ft.
Trapshooter Oil Co.'s No. 2 Rosenbaum ....Standing 4,067 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 1 Manchester (workover) ....Drlg. sandy shale 4,578 ft.
Gulf Prod. Co.'s No. 32 Taylor, James Hamilton Sur. (D.D.) ....Pulling screen to deepen 4,660 ft.
Trapshooter Reilly Oil Co.'s (formerly Mike Kouri's) No. 1 fee, B.B.B.&C. Sur. No. 1,028, 21 ft. from W line and 20 ft. from S line, Blk. 10 ....Set 100 ft. 4-in. screen 4,235 ft.; tested salt water; plugged to 4,175 ft.
Rio Bravo Oil Co.'s No. 14-A Settegast (workover) .....Drlg. hard sand 5,008 ft.
Rio Bravo Oil Co.'s No. 21-A Settegast, J. Kopman Sur., 400 ft. S and 200 ft. E of NE cor. "A" lease...Rig.
Rio Bravo Oil Co.'s No. 102 G.H.&S.A., B.B.B.&C. Sur. No. 1,028, 35 ft. S of C of railroad track and 50 ft. E of No. 101 ....Rigging up to pump 4,441 ft.
Smith et al's No. 1 Bender fee, B.B.B.&C. Sur. No. 1,028, 173 ft. from E line and 14 ft. from N line of Lot 40, Jones Subd. ....Sand showing oil 4,467 ft.; cem. 6⅝-in. casing 4,159 ft.; drilled plug and set 1 joint 4½-in. screen 4,469 ft.; standing.
Tilton & Perot's No. 1 Gulf fee, B.B.B.&C. Sur. No. 1,028, 230 ft. from E line and 26 ft. from S line, Lot 26, Jones Subd. ....Drlg. shale 2,399 ft.
Superior Oil Corp.'s No. 2 Boyles (workover), B.B.B.&C. Sur. No. 1,028 ....No report.
Warner-Quinlan's No. 2 Minchen, B.B.B.&C. Sur. No. 1,028, 44 ft. from S line, Lot 5, and 134 ft. due W of No. 1, Lot 7 ....Comp. flowing 300 bbls. oil 4,471 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 52 Davis M. Young Sur. (workover)..Drlg. gumbo 4,026 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 13 Mayes, B.B.B.&C. Sur. No. 4, 75 ft. W and 700 ft. S of NE cor. of survey .....Rig.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 41 McFaddin (workover), P. Humphreys Sur. ....Drlg. sand and shale 5,579 ft.
Yount Lee Oil Co.'s No. 146 McFaddin, P. Humphreys Sur., 2,772 ft. from W line and 2,528 ft. from N line of tract ....Drlg. shale and lime 5,620 ft.

HIGH ISLAND—GALVESTON COUNTY

Marrs McLean's No. 15 Cade (workover), M. Fitzsimmons Sur., 150 ft. W No. 12 ....Rig up to deepen 4,008 ft.
Marrs McLean's No. 20 Cade ....Rig standing.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 22 Moore (workover) ....Total depth 5,704 ft.; plugged to 4,261 ft.; tested salt water; abandoned.

Gulf Prod. Co.'s No. 25 Moore ..... Shale, no show, 4,241 ft.; set 6⅝-in. casing 3,482 ft.

Gulf Production Co.'s No. 29 Moore, John Frasier Sur., 600 ft. N of 26 in line with Nos. 23 and 26 ..... Rig.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 5 Janner ..... Drlg. sand and clay 162 ft.
Sun Oil Co.'s No. 5 Clay, J. F. Perry Sur., 200 ft. from SW line and 1,850 ft. from SE line of Clay tract.... Drlg. shale 1,355 ft.

ALLEN—BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen (workover), J. G. McNeel Sur., 1,211 ft. from W line and 2,569 ft. from N line of survey ..... Rig up to work over 4,999 ft.
Mills Bennett Prod. Co.'s No. 1 Poole, T. & W. Alley League, 1,390 ft. from E line and 100 ft. from S line (workover) ..... Total depth 4,374 ft.; set whipstock 3,979 ft.; to sidetrack.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds' No. 7 Davis, David Kokernot Sur., 100 ft. S of No. 4 ..... Drlg. gumbo 1,621 ft.
Cranfill-Reynolds Oil Co.'s No. 1-C Kirby fee ..... Drlg. sticky shale 5,915 ft.
Cranfill-Reynolds Oil Co.'s No. 2 Moore's Bluff (workover) ..... No report.

BLUE RIDGE—FORT BEND COUNTY

Doney & Means' No. 1 Blakely, E. Drew Sur., SW cor. E half, Lot 8, Blk. D ..... Moving in.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 13 Boyt, H.&T.C. Sur. No. 22, 500 ft. N of No. 1 in line with Nos. 6 and 11..... Rig.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 112-A Cotton..... Comp. pumping 15 bbls. oil 500 ft.
Rio Bravo Oil Co.'s No. 113-A Cotton..... Rig.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Gulf Prod. Co.'s No. 3 McFaddin, east flank ..... Dry and abandoned 6,206 ft.
Humble Oil & Ref. Co.'s No. 2 Breeding, northwest flank.. Drlg. shale 6,063 ft.
Humble Oil & Ref. Co.'s No. 7 Sterling, east flank ..... Set 21 ft. 4½-in. screen 6,855 ft.; comp. flowing 500 bbls.; sanded; cleaned hole and swabbing.
Humble Oil & Ref. Co.'s No. 2 Sergeant, east flank ..... Sand and shale 5,891 ft.; cmtd. 7-in. csg. 5,730 ft.; drilled plug and set screen.
Texas Gulf Sulphur Co.'s No. 1 Munger, J. McFaddin Sur., 100 ft. N and 75 ft. W out of SE cor. of 100-acre tract ..... Sulphur test.
Texas Gulf Sulphur Co.'s No. 1 Cowan, B. M. Spinks Sur., 200 ft. N and 1,150 ft. W of SE cor. 154-ac. tract ..... Sulphur test.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 14 Pratt-Hewitt-Rooke ..... Shale 5,835 ft.; fishing.
Houston Oil Co.'s No. 5 Wilson Heard (workover) ..... Pulling screen and liner 3,686 ft.
Houston Oil Co.'s No. 1 Rooke ..... Abandoned 6,804 ft.
Houston Oil Co.'s No. 1 Doughty ..... Total depth 6,465 ft.; sidetracked stuck drill stem 4,503 ft.; drlg. shale 6,385 ft.
Houston Oil Co.'s No. 3 Rose Lambert ..... Coring sand and shale 5,929 ft.
Houston Oil Co.'s No. 1 O'Brien (D.D.), Blk. 5 ..... Oil sand 6,405-11 ft.; cmtd. 6⅝-in. csg.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor .... T. D. 6,470 ft.; plugged to 6,431 ft.; tested salt water; preparing to sidetrack.
Moody-Seagraves Prod. Co.'s No. 2-A J. F. B. Heard .... Rig standing.
Moody-Seagraves and Phillips Petroleum Co.'s No. 2 Mercy Academy, 167 ft. from N line and 666 ft. from E line of tract ..... Sand showing oil 6,388-6,417 ft.; cmtd. 6⅝-in. csg. 6,389 ft.; drlg. plug.
Moody-Seagraves Prod. Co.'s No. 1 Shelly ..... Coring sand showing gas 6,446 ft.
Pearson Properties, Inc.'s No. 4 Ryals, Refugio Town tract, 150 ft. from S line and 190 ft. from W line of Ryals tract ..... Oil sand 6,440-45 ft.; cmtd. 6⅝-in. csg. 6,445 ft.
Ed Price's No. 3 Mission River, Refugio Town tract, 750 ft. up river from No. 2 on S bank of river ..... Shut down 350 ft.
L. L. Smith's No. 2 Rogers, James Power Sur. ..... Water sand 6,510 ft.; plugged back to 3,700 ft.
United Prod. Corp.'s No. 1-A Fox, L. Brown Sur., 750 ft. W along S line from SE cor. of lease and 1,000 ft. N of said line ..... Drlg. shale 4,282 ft.
United Prod. Corp.'s No. 3 Fox (workover) ..... Oil sand 6,350-59 ft.; cmtd. 5½-in. csg. 6,347 ft.
United Prod. Corp.'s No. 12 Fannie Heard ..... Location.
United Prod. Corp.'s (Union) No. 2 Moss-Powers, Blk. 109 ..... Derrick.
United Prod. Corp.'s No. 9 O'Brien, 150 ft. S of S line and 175 ft. E of extended W line of Moody-Seagraves' O'Brien "B" lease ..... Gumbo 1,700 ft.; cmtd. 13-in. csg.
United Prod. Corp.'s No. 10 O'Brien, 150 ft. E of E line of Blk. 106, Refugio Townsite, and 428 ft. N of Refugio Town Tract Sur. ..... Oil sand 6,448-54 ft.; cmtd. 7-in. csg. 6,446 ft.
United Prod. Corp.'s No. 11 O'Brien, 200 ft. from E line and 500 ft. N of extreme S line of lease ..... Coring sandy shale 6,333 ft.
United Prod. Corp.'s No. 6 Power, S Blk. 83, Refugio Townsite ..... Sticky shale 1,700 ft.; cmtd. 13-in. (O.D.) csg.
United Prod. Corp.'s (Union) No. 2-A Rose Lambert, 175 ft. W and 200 ft. N of SE cor., Blk. 1, of town tract ..... Gumbo 1,775 ft.; cmtd. 13-in. (O. D.) csg.
United Prod. Corp.'s No. 2 Mitchell (workover), 150 ft. out of NW cor. Mitchell 150-acre tract ..... Sand showing oil 6,430-40 ft.; cmtd. 7-in. (O.D.) csg. 6,437 ft.; drilled plug and set 16 ft. screen; swabbing.
United Prod. Corp.'s No. 4 Mitchell (workover), 150 ft. out of NE cor. Mitchell 150-acre tract ..... Oil sand 6,437-51 ft.; cmtd. 7-in. csg. 6,437 ft.; drilled plug and set 20 ft. liner; comp. flowing 800 bbls. pipe line oil, 1,180 lbs. on csg. and 1,060 lbs. on tubing; quarter inch chokes.
United Production Corp.'s No. 6 A. W. J. Heard, Refugio town tract, 1,253.6 ft. from W line and 257 ft. from S line of tract..... Rig.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Martha Moss ..... Drlg. broken shale and lime 6,206 ft.
Vacuum Oil Co.'s No. 7 Bordages, Sec. 9-10s-9w (workover) ..... Set screen 3,808 ft.; bailing.
Vacuum Oil Co.'s No. 31 Miller (D.D.), 360 ft. from N line and 900 ft. from W line of SW NE, Sec. 8-10s-9w ..... Pulling screen to deepen 4,382 ft.
Vacuum Oil Co.'s No. 8 Farquahar (workover), 350 ft. S and 190 ft. E of NE cor. NE SE Sec. 8-10s-9w .... Oil sand 5,511 ft.; cmtd. 7-in. csg. and 1 jt. screen (1-string job).
Vacuum Oil Co.'s No. 7 State, 319 ft. N and 260 ft. W SE cor. NE Sec. 8-10s-9w ..... Drlg. sandy shale and lime 5,455 ft.

EDGERLY—CALCASIEU PARISH

Rex Pet. Co.'s No. 2 Prairie Narroni, Sec. 21-9s-11w, 365 ft. from S line and 50 ft. from E line of lease ..... Drlg. sand 3,902 ft.

HACKBERRY—CAMERON PARISH

Federal Petroleum Co.'s No. 2 Hebert, 660 ft. S and 660 ft. W of NE cor. NW NW, Sec. 33-12s-10w ..... Drlg. sand and shale 1,830 ft.
R. E. Seiss' No. 3 J. M. Vincent ..... Drlg. 1,306 ft.
The Texas Company's No. 3 State ..... Derrick.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 36 State ..... Location.
Yount Lee Oil Co.'s No. 37 State ..... Location.
Yount Lee Oil Co.'s No. 38 State ..... Location.
Yount Lee Oil Co.'s No. 39 State ..... Location.

VINTON—CALCASIEU PARISH

Gulf Prod. Co.'s No. 6 Gardner, 300 ft. N and 554 ft. W of SW cor. SE NE Sec. 33-10s-12w ..... Drlg. sandy shale 3,374 ft.
Vinton Pet. Co.'s No. 11 Matilda Gray (120 acres), 608 ft. from S line and 195 ft. from E line of tract in Sec. 33-10s-12w ..... Spudded.
Vinton Pet. Co.'s (Lucky Ten) No. 1 Lizzo ..... Tested salt water 3,285 ft.; pulling liner and screen.
Wilson-Broach's No. 2 Wilson (workover), 280 ft. N and 126 ft. E SW cor. SE NE Sec. 33-10s-12w ..... Set 30 ft. 3-in. screen 3,612 ft.; comp. pumping 50 bbls. fluid, 90% b.s. and water.
Wilson-Broach's No. 8 Wilson, Sec. 33-10s-12w, 100 ft. N of Gulf's No. 70 G.&N.G. Sur. ..... Set 44 ft. 4½-in. screen 3,180 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre-Latrielle, 5,978 ft. E and 720 ft. N of SW cor. Sec. 47-9s-2w ..... Drill stem stuck 8,900 ft.; temporarily abandoned.

BAYOU BOUILLON—ST. MARTIN PARISH

Humble Oil & Ref. Co.'s No. 1 Woodyard Lake ..... Drlg. sand 6,242 ft.
Humble Oil & Ref. Co.'s No. 4 State ..... Drlg. hard sand 4,644 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Pet. Co.'s No. 2 Sweet Lake, Sec. 5-13s-7w ..... Drlg. 5,002 ft.
Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. sticky shale 7,059 ft.

PORT BARRE—ST. LANDRY PARISH

The Texas Company's No. 9 Botney Bay ..... Sand showing oil 3,373 ft.; cmtd. 9⅝-in. csg. 3,346 ft.

SORRENTO—ASCENSION PARISH

Gulf Ref. Co.'s No. 19 United Land Co. ..... Salt 4,748-4,870 ft.; plugged to sand 4,345-51 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 762 fee (workover) ..... Drlg. shale and lime 5,858 ft.
Union Sulphur Co.'s No. 765 fee, Sec. 29-9s-10w ..... Drlg. rock 2,041 ft.
Union Sulphur Co.'s No. 766 fee, Sec. 29-9s-10w ..... Drlg. water sand 3,812 ft.

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 12 Watkins (workover) ..... T. D. 5,321 ft.; plugged to sand 5,185 ft.
Shell Pet. Corp.'s No. 16 Watkins, Sec. 18-12s-12w, 1,590 ft. from E line and 1,610 ft. from N line ..... Sand showing oil 4,519 ft.; drlg. plug to test.
Shell Pet. Corp.'s No. 2 State, Sec. 18-12s-12w, 1,345 ft. from E line and 1,565 ft. from N line ..... Salt 4,207-4,519 ft.; sidetracking in salt 4,228 ft.

MISCELLANEOUS WILDCATS
TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. hard shale 6,434 ft.
O'Hara et al's No. 1 Schrader ..... Shut down 3,342 ft.
Tarmerson & Cafferkey et al's No. 1 W. M. Schlecte, John Fitzgibbons Sur., 1,850 ft. from SE line and 3,100 ft. from NE line of Sur. ..... Drlg. sand and shale 426 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. .... Drlg. sticky shale 7,598 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights .... Heaving shale 5,260 ft.; S. D.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Sand showing oil 3,648-53 ft.; set 8¼-in. csg. 3,610 ft.
Amerada Pet. Corp.'s (Rycade) No. 2 Seaburn, Stratton Ridge ..... Coring shale 7,362 ft.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur. Drlg. gumbo 1,820 ft.

BURLESON COUNTY

Paul Doran et al's No. 1 Sparks, H. E. Davis Sur., 6,700 ft. from S line of survey and 1,600 ft. W of Brazos River ..... Sticky shale 1,638 ft.; abandoned.
Mid-South Oil Co.'s No. 1 Duckworth ..... Tested brackish water 2,601 ft.; shut down.
Reynolds Oil Co.'s No. 1 Harris, 500 ft. from W line and 400 ft. from N line of J. M. McKean Sur. ..... Shut down 400 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Smith, J. Timmons Sur., Will Mousin and Driscoll Sub. ..... Drlg. dry sand 3,417 ft.

HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 200 ft. from W line, Lot 261, Wm. Lovett Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 6 Minnetex, Mykawa, Wm. Lovett Sur., C of Lot 254 ..... Building derrick.

JACKSON COUNTY

Chicago-Gulf Co.'s No. 1 Rogers (workover) ..... Rig up to deepen 3,662 ft.; standing.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234 ..... Drlg. sand and shale 6,305 ft.
Keith et al's No. 1 Reed-Hankamer ..... Drlg. gumbo 4,179 ft.
The Texas Company's No. 4 Pipkin, Big Hill ..... Drlg. shale 5,378 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... Gumbo 560 ft.; shut down.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherd's Mott ..... Set 47 ft. 4½-in. screen 5,221 ft.; tested salt water; standing.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Total depth 6,295 ft.; sidetracking 5,280 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe ..... Shut down 678 ft.; gumbo.
Price & Wilhite's No. 2 Guerges ..... Trying to set csg.; T. D. 3,552 ft.

ORANGE COUNTY

Crew Oil Co.'s No. 1 Mansfield ..... Changing rigs 1,412 ft.

SAN JACINTO COUNTY

Arkansas Fuel Oil Co.'s No. 1 A. J. McMurry, A. P. Gardner Sur., 1,255 ft. from N line and 1,945 ft. from W line ..... Abandoned 4,050 ft.
E. P. Edward et al's No. 1 Bennett, northwest of Cold Springs ..... Spudded and shut down.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,265 ft.; cmtd. 6-in. csg. 1,218 ft.
Allied Pet. Co.'s (Texas Southern Pet. Co.'s) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Shut down 4,752 ft.
Lew Wentz' No. 1 Long Bell, 800 varas E and 100 varas N from SW cor. James Seals Sur. ..... Drlg. shale 2,510 ft.

VICTORIA COUNTY

Newton et al's No. 1 West ..... Shut down 1,550 ft.
Lion Oil & Refining Co.'s No. 3-A McFaddin, M. Traviesa Sur., 925 ft. northeasterly on extended line from NE cor. of C. O. Edwards Sur. and 430 ft. N at right angles ..... Drlg. shale 2,476 ft.
United Gas Corp.'s No. 1-B McFaddin, M. Traviesa Sur., 3,700 ft. E and 500 ft. N from NE cor. C. O. Edwards Sur. ..... Coring sand and shale 3,702 ft.

WASHINGTON COUNTY

Penn-Tex Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. ..... Drlg. shale 2,285 ft.
Vegua Oil Co.'s No. 1 P. Graves, S. Clampet Sur. ..... Location.
Oliver Drlg. Co.'s No. 1-A Hahn, J. W. Alcorn Sur. A-3 .. Drlg. shale 1,886 ft.

WHARTON COUNTY

H. H. Givens' No. 3 Hudgins, I. B. Phillips Sur., 19 ft. W of No. 2 ..... Drlg. shale 1,366 ft.

SOUTH LOUISIANA
CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Set 6⅝-in. csg. with 172 ft. 6⅝-in. screen on bottom 6,568 ft.; drilled plug and bailed dry; standing.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Shut down 3,258 ft.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.
Vacuum Oil Co.'s No. 1 Wait (D.D.), 225 ft. out of SE cor. Sec. 12-9s-7w ..... Pulling screen to deepen 5,008 ft.

CAMERON PARISH

Vacuum Oil Co.'s No. 2 Cameron Meadows, 3,120 ft. S and 1,900 ft. W from NE cor. Sec. 21-14s-9w (500 ft. S No. 1) ..... Sand 3,015 ft.; fishing drill stem.
The Texas Company's No. 7 State, Calcasieu Lake ..... Location.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay ..... Abandoned 5,868 ft.
Jefferson Lake Oil Co.'s No. 10 Lake Peigneur, Jefferson Island ..... Salt 2,151-68 ft.; abandoned.
Jefferson Lake Oil Co.'s No. 11 Lake Peigneur, Jefferson Island ..... Drlg. lime rock 796 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 1 Gay, Bayou Choctou ..... Sand showing oil 4,158-74 ft.; cmtd. 7-in. csg. to test; drilled plug and set 41 ft. 4½-in. screen; swabbing showing 28.8 gravity oil.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 9 Wilbert, Bayou Des Glaise, 700 ft. E and 760 ft. N of SW cor. SE SW Sec. 78-8s-8e.. Drlg. sand and shale 560 ft.
Standard Oil Co.'s No. 2 Case, Bayou Des Glaise ..... Location.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Drlg. hard sand 5,839 ft.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue... Drlg. sandy shale 3,343 ft.

JEFFERSON DAVIS PARISH

H. T. McClain et al's No. 1 Trimble Atterbury, Welsh, Sec. 16-9s-5w ..... Drlg. shale 6,049 ft.
A. V. Peters' No. 1 Smith Subd., Welsh, 1,050 ft. N and 180 ft. E SW cor. Sec. 22-9s-5w ..... Drlg. gumbo 536 ft.

LA FOURCHE PARISH

The Texas Company's No. 2 L.L.&E. Co. (D.D.), 4,396 ft. S and 705 ft. E of the NW cor., Sec. 26-21s-22e ... Drlg. 3,992 ft.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 2 Cockrell-Horan, Lake Grand Ecaille ..... Salt 5,445-5,861 ft.; abandoned.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Jacobs, Sec. 28-11s-6e ..... Drlg. gumbo 2,302 ft.

ST. TAMMANY PARISH

Washington-St. Tammany's No. 2 Cossack, Sec. 5-6s-10e.. Shut down in gumbo 3,031 ft.

TANGIPAHOA PARISH

Joan Development Co.'s No. 1 Lake Superior, Sec. 20-5s-9e, 540 ft. E, 675 ft. N of SW cor. ..... Total depth 3,035 ft.; shut down.

TERREBONNE PARISH

United Prod. Corp.'s No. 9 Minor, Houma ..... Shut down waiting orders 6,500 ft.
The Texas Company's No. 4 State, Caillou Island ..... Rig.
The Texas Company's No. 6 State, Caillou Island ..... Drlg. shale 2,640 ft.
The Texas Company's No. 1 La.L.&E., Bay St. Elaine .. Hard sand and lime 4,751 ft.; drill stem stuck.
The Texas Company's No. 6 State, Bay St. Elaine ..... Location.
The Texas Company's No. 4 State, Dog Lake ..... Rig.
The Texas Company's No. 5 State, Four Isle ..... Cap rock showing sulphur 530-66 ft.
The Texas Company's No. 3 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 5 State, Lake Barre ..... Capping piling.
The Texas Company's No. 8 State, Lake Barre ..... Drlg. rock 6,717 ft.

VERNON PARISH

Smith & Wier's No. 1 Delta, NE Sec. 14-2n-11w ..... Drlg. rock 649 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Drlg. gumbo 592 ft.

GULF COAST FIELDS

(Continued from Page 47)

1 Westheimer, 800 feet from the east line and 100 feet from the south line of Block 1, in Lot 48, Westheimer Subdivision, John Brown Jones one-third league. This is on the west side but up on the dome between the west flank pool and the old shallow field, and in undrilled territory.

One of the most interesting tests at Humble is Sun Oil Co.'s No. 1 Beck, 100 feet from the north line and 80 feet from the east line of Lot 5, Block 1, Koim Subdivision, H.E.&W.T. Survey, a deep wildcat on the extreme southwest side of the dome. At the close of the week it was drilling in hard shale below 4,850 feet. If completed as a producer it will be a link between the pools on the west and on the south.

On the east side of the dome The Texas Company's No. 29 C.O.&G., a former producer at 3,188 feet, is sidetracking the old hole at 3,072-88 feet, preparatory to drilling deeper.

HOUSTON OIL ABANDONS NO. 1-B ROOKE AS DRY

HOUSTON, Tex., Apr. 6.—Houston Oil Co. has abandoned as dry its No. 1-B Rooke, northeast corner of the Rooke 800-acre tract in the Thomas McMullen Survey, Refugio, after drilling to a total depth of 6,804 feet. This test was on the extreme southwest side of the Refugio district and a rank wildcat for deep drilling. It was not only around 3½ miles to the southwest of present deep production which borders the townsite on the east and south, but it also was about 2,000 feet southwest of the production in the 3,700-foot area.

The deep sand area, however, added another good producer in United Production Corp.'s No. 4 Mitchell, southeast of the townsite, which in sand at 6,437-51 feet set 30 feet of screen and came in flowing initially 800 bbls. of pipe line oil daily on quarter-inch choke. Production since has increased to 1,200 bbls. with present working pressures of 1,225 pounds on the tubing and 1,200 pounds on the casing.

At this time, however, several other deep wells in the 6,400-foot horizon have set screen and are preparing to test.

ORCHARD DOME LINE OF PRODUCTION EXTENDED

HOUSTON, Tex., Apr. 6.—The line of production around the south side of the Orchard Dome, Fort Bend County, was extended another 400 feet to the northeast by the completion of Gulf Production Co.'s No. 28 Moore, flowing 552 bbls. daily with a joint of 4½-inch screen set in sand at 3,487-3,509 feet. This company's No. 22 Moore, also on the south flank, and a former producer in sand at 4,073-4,118 feet, has been abandoned after deepening to 5,704 feet. From the total depth it plugged back to a sand at 4,260 feet and tested salt water. Location has been made for No. 29 Moore, John Frazier Survey, 600 feet north of No. 26 in line with Nos. 23 and 26. It is rigging up.

SOUTHWEST TEXAS

(Continued from Page 44)

Oil Corp. However, the old Balcones Oil Corp. test may also yet be deepened.

In Frio County A. H. Wray's No. 1 Burns is standing at 3,716 feet. It has the hole cleaned out and is waiting for a string of casing. It has had some good showings.

Pettus Area

The only thing of importance in the Pettus area the last week is another 1,100-foot extension eastward of the Ray-McKinney Pool with the completion of the United Production Co.'s No. 35 Ray. It has the sand at 3,958-65 feet and it set casing without making a test. It should be in by the close of this week. This makes a total of 3,000 feet that the field has been extended to the east with three tests in a straight line and nothing to determine the width. This Ray-McKinney spot east of the Pettus Townsite has no dry holes. The United Production Co.'s No. 31 Ray between the Ray-McKinney Pool on the east and the Pettus Townsite Pool on the west was reported a producer two weeks ago, proving that the townsite pool and Ray-McKinney Pool are one. There are no dry holes north, south or east, so that the limits of the pool remain to be defined. On the west side of the townsite the limits seem to be defined, bu Mauldin's No. 1 fee at the southwest corner, waiting on casing, may extend the field in that direction also, as a drill stem test indicates it will be a producer.

In the Grayburg area 7 miles west Mauldin & Fisher's No. 1 Kimball has not yet set casing, but it showed some oil and has a chance to bring that territory back as a pool.

Corpus Christi Area

Saxet Oil Co.'s No. 7 Dunn in the Saxet gas field is in and making gas and oil at 4,296 feet. The No. 6 Dunn nearby was the first oil producer in the field and in a new sand and it is now making about 100 bbls. of oil a day. It is believed the No. 7, the only other test drilled to that sand, will make as good a well as No. 6. It started off with 175 pounds pressure, but developed to 1,250 pounds before it had cleaned itself fully. The company is deepening the No. 4 Dunn also. Completion of the second fairly good well in that deep sand adds more than ordinary importance and just about settles the proposition that a new pool is to be developed. The Saxet Field was discovered and developed as a gas field in sand at around 2,400-2,500 feet and this sand has been extended since to the south and west.

There is another sand at about 4,000 feet that is also about to develop a pool a little farther to the west but overlapping into the 2,400-2,500-foot gas sand. The Houston Oil Co.'s No. 1 Joe Hunter was the discovery well in that sand. Last week O. C. Best had a showing in his No. 1 Boory 2 miles to the west at 4,045 feet. It was carried on down to 4,220 feet. It tested salt water and is now being plugged back to 4,050 feet where it will be tested again. It showed some gas and oil on the first drill stem test.

The Houston Oil Co.'s No. 2 Ran Morgan, in the same sand, has come in and cleaned itself and developed up to 1,600 pounds pressure and showing oil with the gas and Moody-Seagraves' No. 1 Sedwick, in the same area and in the same sand, has set casing and is waiting on cement. It will take another week or more to determine just what this new 4,000-foot sand is going to do.

SOUTHWEST TEXAS PRODUCTION

Bexar County	353
Branyon	21
Bruner	12,448
Buchanan	94
Chapman	4,219
Dale	291
Darst Creek	18,545
Goliad County	48
Kingsville	123
Larremore	15
Luling	7,997
Lytton Springs	735
Manford	140
McMullen County	20
Medina County	22
Minerva	404
Mirando district*	13,080
Pettus district	7,104
Saxet	138
Somerset	1,382
S.R.C.-Vacuum	115
Thrall	35
White Point	40
Yoast	175
Total	67,544
Week ended March 28	78,852
Decrease	1,308

*Includes Charco-Redondo, Jennings and Mirando Valley of Zapata County; Albercas, Aviator, Caroline-Texas, Mid-O-Juelos, Schott and Wolcott, Webb County; Alworth, Henne-Winch-Fariss and Randado of Jim Hogg County; Cole, Driscoll, Kohler, Schoolfield-O'Byrne of Duval County; Mount Lucas, Live Oak County.

MICHIGAN FIELDS

(Continued from Page 52)

ship, Muskegon County, at about 350 feet.

Henry W. Carpenter is drilling old No. 5 of the White River Oil Corp., N half NE SE, Section 19-12n-17w, Montague Township, into the Dundee. Limestone was topped at 2,080 feet. It is hoped that these wells west of Montague village may open a new Muskegon County pool.

Three wells in the old Muskegon Field are being deepened to the Monroe for gas: Muskegon Oil Corp.'s No. 2 Stanley Daniloff, SW SW, Section 5-10n-16w; Lima Oil Corp.'s No. 1 Louis P. Haight, NE SW, Section 9-10n-16w, and Blue Arrow Petroleum Corp.'s No. 1 Alex Laman, SW NE, Section 8-10n-16w. No. 2 Daniloff is near the north edge of the old Muskegon Township Field on the Bear Creek Flats and the others are on the Muskegon River Flats where best results in the Monroe formation have been obtained.

OKLAHOMA FIELDS

(Continued from Page 37)

cor. SW NE, Section 30-8-8, has an accumulative recovery of approximately 140,000 bbls. to April 1. Other wells and leases in the pool have only been completed a short time and have a small cumulative recovery.

The daily average pipe line shipments from the Greater Seminole area were holding steady for the week ending March 23. Shipments from the Konawa, St. Louis and Wanette Pools show a large decline for the same seven days. The crude storage in the Greater Seminole area shows little change, a net total of 371 bbls. of oil was withdrawn. A daily average of 10,123 bbls. was withdrawn and 9,752 bbls. went to storage. The Standish Pipe Line Co. (Phillips) and the Mid-Continent Pipe Line Co. ran crude out while The Texas Company, Tidal Oil Co. and Empire Oil & Refining Co. stored crude oil. Withdrawals from storage have been steady for the last six weeks in the area.

The Indian Territory Illuminating Oil Co. has sold approximately 700,000 bbls. of storage oil in the Seminole area. The Barnsdall Oil Co. purchased 350,000 bbls. of the oil from the Indian Territory Illuminating Oil Co.'s tank farm in Section 24-7-6. The Barnsdall Oil Co. will handle the oil at the rate of 2,000 bbls. a day. The Texas Company will ship 5,000 bbls. a day of the crude oil purchased, taking it from the tanks located in Section 15-8-6. The Texas Company will take 350,000 bbls.

State umpire, Ray Collins, estimates the shut-in production as of April 1, outside of the Oklahoma City Field, to be 209,500 bbls. in the entire State of Oklahoma.

A west extension to the Wewoka Townsite Pool was looming with the finding of a showing of oil in the Mid-Continent Petroleum Corp.'s No. 1 Tomme, SE cor. NE NE, Section 25-8-7, located about a half mile west of the producing wells in the main part of the pool. The showing of oil was found in the Gilcrease sand from 3,005-16 feet. The test cored shale from 3,018-47 feet and was reaming down to core deeper.

Another failure was reported from the Wewoka Townsite Pool during the week. Burke-Greis Oil Co.'s No. 3 Henshaw, NW cor. NE SW, Section 30-8-8, found a hole full of water at a total depth of 4,132 feet. It was plugged back to 4,040 feet, and the Simpson and Hunton will be tested for production.

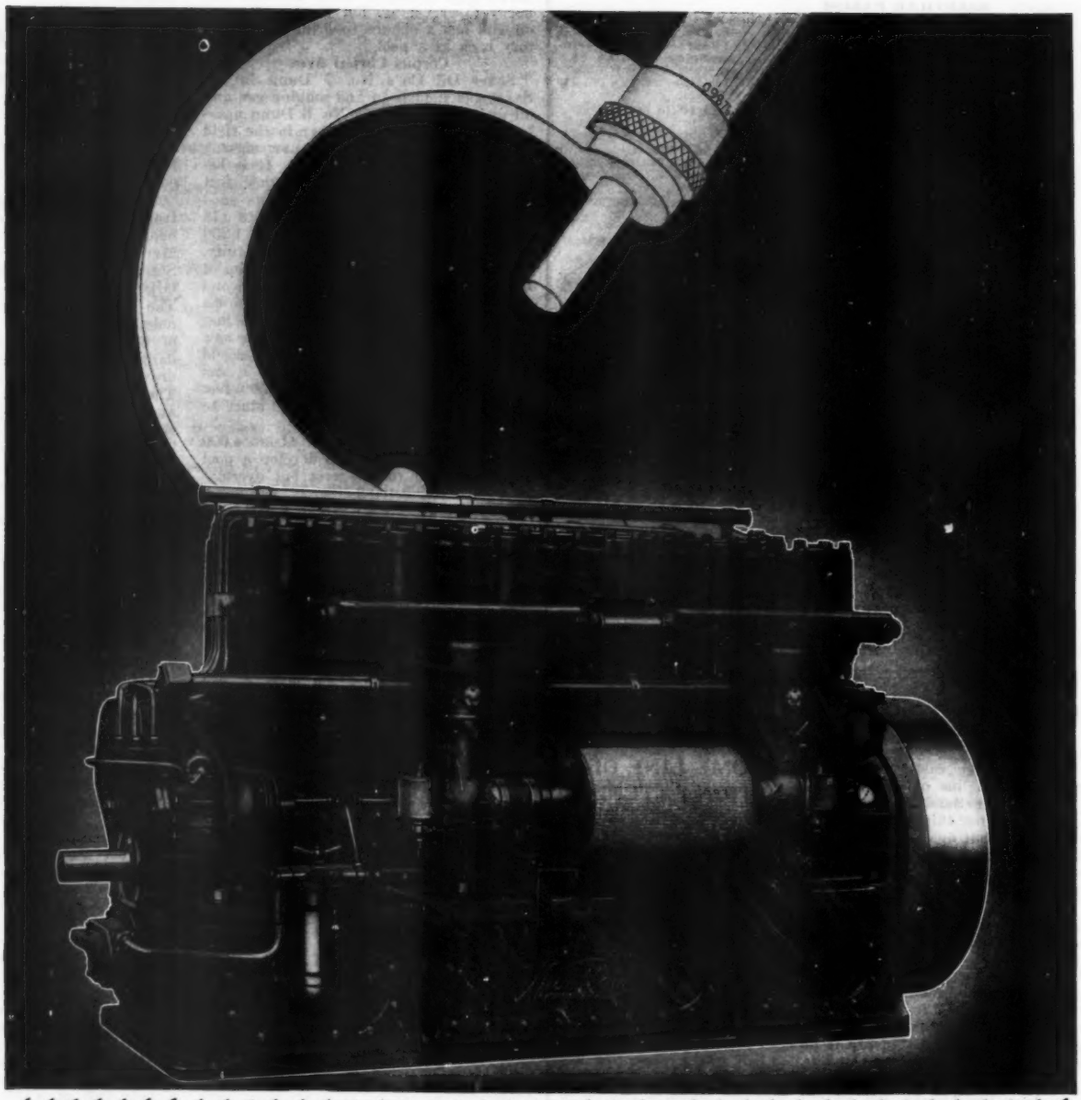
Potentials for the month of April were completed in the Wanette and Konawa Pools during the week and both pools reported a decline from the previous gauges. The Wanette Pool shows a decline of approximately 18,400 bbls. a day, the present potential gauge was 32,322 bbls. a day from 47 wells with two off production, compared to the previous potential of 50,786 bbls. a day. Konawa production shows the largest decline of Greater Seminole area with a loss of 37,718 bbls. a day. The present daily potential was 30,815 bbls. a day from 108 wells compared to 68,533 bbls. a day from the previous potential.

Greater Seminole Production

The production from the Greater Seminole area for the week ending March 30 averaged 180,383 bbls. a day from 2,858 wells. Production shows a decline of 48,658 bbls. a day for the area from the preceding week's gauge. The first 12 pools listed below comprise the Seminole area which averaged 134,137 bbls. a day from 1,857 wells.

Pool—	Wells	Bbls.
Little River	371	35,824
E. Little River	81	9,145
Carr City	83	12,186
Maud	131	1,321

(Continued on Next Page)



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WAUKESHA ENGINES

Pool—	Wells	Bbls.
Mission	90	8,731
Bowlegs	272	18,788
Earls. oro	281	11,268
S. Earlsboro	27	5,828
E. Earlsboro	155	21,617
Seminole	252	5,063
E. Seminole	34	1,194
Searight	80	3,173
Total	1,857	134,137
Allen	280	6,985
Asher	25	683
Wanette	59	8,146
Konawa	110	13,265
Sasakwa	48	3,372
St. Louis	479	13,795
Grand total	2,858	180,383

Greater Seminole Shipments

The pipe line shipments from the Greater Seminole area totaled 184,204 bbls. a day for the week ending March 30. The daily average shipments by companies were as follows:

Company—	Seminole (bbls.)	Asher. St.Louis (bbls.)	Konawa (bbls.)
Barnsdall	4,215	....	....
Champlin	3,814	....	837
Consolidated	....	2,759	....
Cosden	5,914	....	3,003
Deep Rock	2,205	1,406	....
Empire	6,307	....	....
Gulf	18,910	3,166	1,032
Magnolia	9,316	3,436	665
Oklahoma	27,615	224	115
Prairie	3,861	4,061	566
Prod. & Ref.	2,190	....	....
Pure	7,884	....	....
Shell	4,616	192	1,462
Standish	1,822	....	....
Stanolind	19,864	4,764	3,526
Texas	11,248	1,485	2,001
Tidal	11,164	3,245	....
Total	140,900	24,738	13,207
Tank cars	5,309	50	....
Grand total	146,209	24,788	....

Oklahoma City Shipments

The total shipments from the Oklahoma City Field for the week ending April 4, were 906,088 bbls. of oil from the leases. The shipments by companies were as follows:

Company—	Bbls.
Champlin	16,527
Empire	192,532
Magnolia	21,752
Oklahoma	110,827
Prairie	6,857
Shell	31,706
Sinclair	219,341
Stanolind	260,773
I. T. I. O.	45,775
Total	906,088

Oklahoma City Production

The following wells were on production during the seven days ending March 30, in the Oklahoma City Field, under proration. All other wells were shut in and will be produced according to the curtailment.

Oklahoma City Pool

	S-T-R	Wells	Prod.
Acme:			
Armourdale	2-11-3w	1	203
Anderson-Prichard:			
Clark	3-11-3	1	161
Gibbons	1-11-3	5	210
Key	2-11-3	1	52
Moore	2-11-3	1	42
Roosevelt Place	2-11-3	5	308
Moore	2-11-3	1	42
Brown et al	14-11-3	1	108
A. and P. Phillips:			
Hathaway	10-11-3	1	668
Rayhill	10-11-3	1	1,027
Sandness	10-11-3	1	820
Wright	10-11-3	1	534
British-American:			
Eckroat	10-11-3	1	1,242
Holmes	10-11-3	7	6,155
Capitol:			
Campbell	2-11-3	1	791
Century:			
Barr	10-11-3	1	245
Wheeler School	10-11-3	1	1,443
Wyatt	2-11-3	1	913
Champlin:			
McCulip	2-11-3	1	666
Naden	2-11-3	1	605
Seal	2-11-3	2	279
Chattam:			
Lindsey	2-11-3	1	1,055
Coline:			
Clauer	23-11-3	16	2,270
Olds	24-11-3	10	96
Warren	13-11-2	8	434
Continental:			
Sudik	6-10-2	4	435
Vinita Park	2-11-3	2	1,067
Cromwell-Franklin:			
T. Park	13-11-3	32	3,645
Denver:			
Alexander	2-11-3	1	1,997
Harvey	15-11-3	1	881
Empire:			
Gustine	1-11-3	2	289
Hall-Briscoe:			
Muller	2-11-3	1	339
I. T. I. O.:			
Billon	26-11-3	1	46
Bodine-Anderson	30-11-2	3	29
Bodine, A.	24-11-3	6	56
Bodine, S.	30-11-2	3	4
Brokaw, C.	13-11-3	4	3
Butterfield	11-11-3	1	185
Canfield, L.	19-11-2	2	8
Canfield, Butt.	19-11-2	3	148
Carrico	14-11-3	5	776
Coppinger	11-11-3	8	1,008
Corff	11-11-3	5	284
Drake	14-11-3	2	242
Earp	22-11-3w	1	253
Emmerson, N.	30-2-11	11	52
Farley, L.	19-11-2	4	20
Farley-Fuzzell	19-11-2	2	108
Ferndale, Comm.	11-11-3	6	463
Fuzzell, M.	19-11-2	3	28
George	7-11-2	1	35
Hammer	11-11-3	2	154
Handl	11-11-3	1	100
Holmes-Gray	14-11-3	1	57
Johnson	25-11-3	9	255
Jones, H. W.	1-11-3	4	104
Jones	31-11-2	14	4,528
Jones, Comm.	1-11-3	4	1,040
Knox, May	14-11-3	4	431
Lawrence Place	15-11-3	3	3,323
Lawton	11-11-3	2	39
Lemmon	11-11-3	5	354
Magnolia Heights	14-11-3	1	182
M.K.&T.	33-12-3	4	1,640
Mount Vernon Heights	15-11-3	1	21
Oklahoma City	26-11-3	1	511
Pasadena Heights	14-11-3	5	332
Peterson, Sad.	25-11-3	8	452
Phelans	15-11-3	2	127
Phillips	1-11-3	1	862
Precure, A.	11-11-3	1	233
Rensimer	14-11-3	1	248
Reynolds	6-10-2	1	4
Salaman	32-11-2	5	212
Spannagle	15-11-3	1	478
Spillman	14-11-3	3	260
Sudik	31-11-2	10	385
Theimer, E.	12-11-3	8	1,101
Trosper	13-11-3	11	498
Trosper, Clar.	14-11-3	4	1,235
Trosper, E.	14-11-3	2	582
Trosper, H. G.	14-11-3	7	2,365
Trosper, L.	12-11-3	2	33
Trosper, P.	18-11-2	1	29
Unsell, M.	23-11-3	6	65
Unsell-Krager	23-11-3	3	21
Viewpoint	10-11-3	4	1,291
Waters	23-11-3	6	111
Webber-Wall	14-11-3	1	185
Wheeland	10-11-3	1	257
Wheeler	13-11-3	3	699
Wilkie-Anderson	25-11-3	3	16
Williams	23-11-3	1	265
I. T. I. O. et al:			
Boulevard Addition	14-11-3	1	82
Julian:			
Walker	10-11-3	1	235
Kedberg:			
Burss	2-11-3	1	2,045
McArthur:			
Armour	2-11-3	1	193
Mid-Kansas:			
Mollman	23-11-3	4	490
Mid-Texas:			
Aungust	3-11-3	1	1,252
Minnehoma:			
Pugh	2-11-3	1	1,885
Phillips:			
Ashcan	3-11-3	1	1,507
Black	10-11-3	1	1,284
Carey	2-11-3	1	32
Ciger	2-11-3	1	1,195
Davis	10-11-3	1	1,816
Hyland	10-11-3	1	783
Kleinegger	10-11-3	1	526
Lybrand	2-11-3	1	1,416
McAusland	10-11-3	1	1,242
McBath	10-11-3	1	600
Rallen	2-11-3	1	554
Robb	10-11-3	1	348
Roose	2-11-3	1	203
Schilling	10-11-3	1	1,004
Temple	10-11-3	1	1,200
Unruh	2-11-3	1	653
Velt	2-11-3	1	361
Burt	10-11-3	1	490
Prairie-Slick:			
Hiddleston	19-11-2	7	356
Sigman	32-11-2	7	530
Shell:			
Petty	30-11-2	7	60
Sinclair:			
School Land No. 54	36-11-3	16	3,502
School Land No. 67	36-11-3	5	46
Stamper	30-11-2	6	24
Venci	31-11-2	16	1,822
Sinclair-Amerada:			
School Land No. 69	36-11-3	3	1,565
Skelly:			
Fields	10-11-3	1	352
Harper-Turner	3-11-3	1	1,858
Hoops	31-11-2	8	107
Skelly et al:			
Hurt	2-11-3	1	3,373
Dillon	2-11-3	2	264
Tanner	10-11-3	2	665
Slick, T. B.:			
Blevins	10-11-3	1	848
Central	3-11-3	1	75
Foote	2-11-3	3	390
Foote-Briscoe	2-11-3	1	43
Frisco	3-11-3	2	2,430
Glidden	13-11-3	2	68
Zerkerle	13-11-3	1	17
Slick et al:			
Baker	1-11-3	5	56
Clegg	2-11-3	2	391
Dunivan	1-11-3	1	664
Key	2-11-3	2	150
Townsend	1-11-3	2	239
Slick-I. T. I. O.:			
Donnis	11-11-3	1	101
Sunray:			
Donavon	34-12-3	1	3,982
Harris	2-11-3	1	203
Mead	34-12-3	1	3,585
Olafson	2-11-3	1	1,762
Twyford-Smith	10-11-3	1	1,111
Westgate Oil:			
Kelsey	10-11-3	1	407
Wilcox:			
Wilson	10-11-3	1	726
Wirt Franklin:			
Lowery	12-11-3	10	66
Page	35-12-3	5	2,124
Theimer	2-11-3	13	1,545

(Continued on Next Page)

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	S-T-R	Wells	Prod.
Wright-Smith:			
Smith	2-11-3	2	896
Total		754	125,471
Last week		748	136,314

New wells, 6; decrease, 10,843 bbls.; average per well for pool, 166 bbls.

Caddo County

Magnolia Petroleum Co. is building the rig for No. 2 Estes, SE cor. SW NE, Section 10-5-9w.

Carter County

Amos Drilling Co.'s No. 2 Hooks, SW cor. SE SE, Section 13-1s-3w, has been completed for 1,450 bbls. in sands 2,005-2,199 feet. Carter Oil Co.'s No. 1 Robb, NW cor. SW NW, Section 19-1s-2w, made 1,240 bbls. in 20 hours from sands 1,741-1,848 feet and 1,848-96 feet.

Creek County

J. B. Grieves made location for No. 1 Lowe, NW cor. SE NE, Section 13-19-8. R. E. Freeman's No. 1 Green, NW cor. SE NW, Section 15-19-7, has been completed for 75 bbls. in sand 2,664-2,732 feet. McCulloch and others' No. 1 Wofford, NW cor. SW SE, Section 15-19-7, made 25 bbls. in sand 2,750-2,838 feet. A. A. Bailey and Johnson's No. 4 Weaver, NW cor. SW NW, Section 18-19-9, has been completed for 120 bbls. in sand 2,207-45 feet. J. E. Wallace and others' No. 1-A Baker, SE cor. NE NW, Section 14-17-10, has been deepened to 2,896 feet and abandoned.

Grady County

Margay Oil Co. and others' No. 1 Carson, CWL NW NW, Section 25-4-8w, is a rig under construction. J. B. Nichols' No. 1 Childers & Gardner, Section 35-4-8w, has been completed for 17,500,000 feet of gas in sand 1,911-46 feet.

Jefferson County

C. D. Chenault's No. 1 Grover, NE cor. NW SW, Section 23-7s-6w, is drilling at 350 feet.

McIntosh County

J. S. Routt and others moved a machine in for No. 1 M. Wolf, CSL NE SE, Section 34-12-15.

Muskogee County

W. F. Simpson and others moved a machine in for No. 1 Manuel, NW cor. SW SE NE, Section 24-15-17. Western Drilling & Equipment Co.'s No. 4 Fields, NE cor. SW, Section 9-15-18, has been abandoned at 1,162 feet. G. D. Robinson's No. 1 London, CWL NE SW, Section 17-13-16, has been completed for 5,726,360 feet of gas in sand 1,092-1,112 feet.

Oklahoma County

Phillips Petroleum Co. has the cellar dug for No. 2 Hyland, Block 28, Lots 7 and 8, Hyland Addition, SW cor. NE, Section 10-11-3w, Oklahoma City Field. No. 1 Schilling, CSL NW NE SW, Section 10-11-3w, made 7,034 bbls. in four hours from Wilcox sand 6,409 feet, total depth 6,540 feet. No. 1 Temple, CWL NE NE NW, Section 10-11-3w, has been completed for 8,405 bbls. in four hours through a 4-inch choke, producing from Wilcox sand topped at 6,336 feet, total depth 6,515 feet. Westgate Oil Co.'s No. 1 Wilson, NW cor. NE SW NW, Section 10-11-3w, topped Wilcox sand at 6,400 feet, drilled to total depth of 6,550 feet and made 5,082 bbls. in four hours. Indian Territory Illuminating Oil Co. and others' No. 1 Earp, NE cor., Section 22-11-3w, topped School Land sand at 6,580 feet, drilled to 6,620 feet and made 1,776 bbls. in eight hours.

Okfuskee County

Mid-Continent Petroleum Corp.'s No. 1 Phillips, NE cor. SW, Section 32-12-10, is rigging up to deepen from 3,421 feet.

Osage County

The Texas Company's No. 1, CSL SE SW, Section 12-24-8, is drilling at 2,030 feet. F. J. Carroll's No. 3, NE cor. SE, Section 15-24-8, is drilling at 1,355 feet. A. G. Oliphant's No. 3, NE cor. SE SE, Section 21-24-9, has drilled to 800 feet and shut down. Bacon & Voyles' No. 10, NW cor. SW NW SW, Section 30-23-9, is drilling at 470 feet. E. O. Platter's No. 7, SE cor. NW NE, Section 30-32-9, is spudding. Turman Oil Co.'s No. 7, CEL W half SW, Section 11-21-8, is drilling at 1,360 feet. J. L. Essley's No. 1, SW cor. SE, Section 1-20-9, is drilling at 1,591 feet. Oklahoma Power & Water Co.'s No. 119, SE cor. SW SW, Section 4-20-10, an old well being deepened, is fishing for tools at 1,700 feet. Oklahoma Natural Gas Corp.'s No. 1,824, SE cor. NE, Section 18-20-12, is drilling at 850 feet. L. G. Stanley and others' No. 1, SE cor. SW, Section 4-28-7, is dry and abandoned at 2,865 feet. Kay County Gas Co.'s No. 9-B, SE cor. NW SW, Section 22-24-7, has been completed for 500,000 feet of gas in Burgess sand 2,607-53 feet. Galt Brown Oil Co.'s No. 1, NW cor. SW, Section 14-24-8, made a 10-bbl. well in chat 2,310-25 feet. E. O. Platter's No. 6, NE cor. NW SW NE, Section 30-22-9, has been completed for 10 bbls. at 436 feet after plugging back from 525 feet. C. O. Buckles' No. 2, SW cor. NE NE, Section 33-22-11, is dry and abandoned at 1,562 feet. Oklahoma Power & Water Co.'s No. 130, SE cor. NE SW NW, Section 4-20-10, has been abandoned at 2,118 feet. Oklahoma Natural Gas Corp.'s No. 1,823, SE cor. NE NW, Section 3-20-12, is dry and abandoned at 1,675 feet.

Pawnee County

Peter Adamson, Jr.'s No. 1-A Cohen, NW cor. SW, Section 3-20-8, is a machine rigging up. No. 1-A McFall, NE cor. SE, Section 4-20-8, has drilled to 1,815 feet and is now plugging back. T. E. Harris' No. 1 Brodell, NW cor. SE, Section 9-20-9, is drilling at 625 feet. Thompson & Black's No. 4 Mote, NW cor. NE SW, Section 14-20-9, is spudding. Brewer and others' No. 1-A Needham, CWL NW NE, Section 1-20-7, has been abandoned at 2,855 feet.

Pontotoc County

Edna Marie Oil Co.'s No. 1 Harrell, NE cor. SE, Section 29-5-8, Allen Pool, is dry and abandoned at 865 feet.

Seminole County

Droppleman and others' No. 1-A A. Deavers, SE cor. NW SW, Section 29-6-6, Konawa Pool, flowed 675 bbls. from sands 2,665-2,715 feet.

Tulsa County

Chandler & Day's No. 1-A Shields, SE cor., Section 20-19-14, made 3,500,000 feet of gas from sand 1,302-06 feet. L. L. Boyd's No. 1 Costello, SE cor. SW NE, Section 2-18-14, has been abandoned at 1,450 feet. Ohio Petroleum Co.'s No. 3 Haikey, SE cor. SW SW, Section 33-18-14, has been completed for 190 bbls. in sand 1,487-1,538 feet.

Wagoner County

A. E. Carder moved a machine in for No. 6 J. Atkins, NW cor. SE SE, Section 25-18-15.

HUBER PETROLEUM CO.'S CONTRACT IS CRITICIZED

(Continued from Page 69)

to be delivered by the Huber company and purchased by the city shall be 4,000,000 feet per 24 hours. If the customers of the municipal system require 4,000,000 feet on January 1, do you realize that they would only need about 1,000,000 feet on July 4? Yet you have obligated the city to take 4,000,000 feet every day in the year, regardless of the variation of seasonal requirements. In other words, the city will pay 5 cents per 1,000 feet only when it is utilizing its maximum peak consumption. As the weather becomes warmer the cost to the city will increase on account of having to pay for gas that cannot be used. Therefore, in warm weather this cost to the city may easily mount to 20 cents per 1,000 feet. This embarrassing obligation on the city's part is even more striking when one stops to think that the Huber company has no corresponding obligation. The contract on this point says: "Such minimum deliveries shall be subject nevertheless to the delivery thereof from the wells hereinafter mentioned under their own volumes and pressures . . ." Therefore, the city is bound to receive the minimum deliveries, but the Huber company is not actually bound to deliver the minimum, or any amount whatever.

2. The people of Amarillo have the impression that the city has first call upon a gas reserve approximating 10,000 acres. The writer, however, understands that the map attached to the contract as published, shows only one 1,650 acres, and a most casual inspection of the contract will show that the city does not have first call even upon this small acreage. The contract contains the following provisions: "It is mutually understood that the seller (Huber) retains the right to use or sell such volumes of gas from said line as it may require for its own purposes and for sale along the route of said lines, as long as none is sold to any purchaser in and adjacent to the city of Amarillo."

At the present time, and for sometime past, the production from 6 of Huber's 16 wells is being consumed by the Huber Carbon Black Co.'s plant in Hutchinson County. The contract hereunder examination confirms the Huber company's right to so use this gas, and to use as much more as increasing carbon black demands may require, even though this use may interfere with the city's needs. This isn't protecting Amarillo.

3. The contract in question does not guarantee a gas supply to the city of Amarillo for any special period of time, or in any quantity. It is true that the contract does state that it shall be in force and effect for a period of 20 years, but this clause is qualified to the extent that the Huber company is only obligated to deliver such gas so long as the 16 wells mentioned are producing and no longer, and only such of that as it does not use or otherwise sell.

4. Another most unsatisfactory provision of the contract is that the city has restricted itself to one remedy in case the Huber Petroleum Co. defaults in keeping the wells or pipe line in good condition. The one remedy saved by the city is for the city itself to do such work as is necessary to keep the wells and pipe line in working condition. The expense of this work must be borne by the city, then in turn to be reimbursed by the Huber company out of gas sales only. This illustrates clearly how the city may involve itself in the production and transportation of gas, as well as the distribution, and forecasts the troubles and complications which lie ahead.

5. Statements carried in the headlines of the local newspaper have left the impression with the public generally that the Huber Petroleum Co. had obligated itself to construct an additional 10-inch line. The contract does not obligate the Huber Petroleum Co. to construct any additional lines whatever. We quote the provisions of the contract with reference to the additional lines as follows: "In the event the buyer (city) in the future needs additional gas to that which can be delivered through the lines hereinabove specified, the seller (Huber) agrees to sell and the buyer agrees to buy and pay for such additional gas on the same terms and provisions as are herein contained covering the gas sold hereunder; provided that the additional amount required by the seller (Huber) is sufficient in volume that in the opinion of the seller it would justify the laying of a parallel line to take care of such additional deliveries of gas; and provided such volumes of gas are available at well pressures from the properties of the seller." A most casual reading of this provision will demonstrate clearly that Huber company does not obligate itself to do a single thing with reference to an additional line.

6. Although most of the Huber acreage is in an area known to produce sulphur gas, the city agreed to take and pay for whatever gas is delivered regardless of its quality. Sulphur gas is most unsuitable for use in homes.

7. The contract does not show the approval of the city attorney and the people of Amarillo ought to know whether it meets with his approval.

Many other defects might be mentioned but the writer has mentioned only the most conspicuous ones, avoiding all technicalities.

I submit that this contract is wholly insufficient upon which to base a costly distributing system.

(Signed) Charles H. Keffer.

CANADIAN FIELDS

(Continued from Page 66)

dolomite some may have been missed owing to breaking up. The present show is either in the lower Fernie or the top of the Madison lime, and the horizon corresponding to the main producing horizon of the Madison in the Turner Valley Field has still to be reached. The strike has been pronounced by G. R. Elliott, government geologist at Lethbridge, as most encouraging for drilling on the Spring Coulee structure. In addition to the Canadian Exploration-Alberta Pacific holdings, Nordon Corp. holds considerable acreage in the Spring Coulee district.

Alberta Pacific Operations

Shareholders of Alberta Pacific Consolidated Oils, Ltd., at their annual meeting at Calgary re-elected the following officers: President, Dr. A. B. Singleton; vice president, T. A. Hornibrook; secretary-treasurer, S. B. Phipps; directors, T. M. Carlyle, R. W. Ward, William Hackney, G. M. Bell, H. A. Howard, F. E. Spooner, I. W. McArdle. In addition to the Spring Coulee deep test in southern Alberta, the company is interested in two other active tests, the Cole-Hunter Syndicate's No. 1, LSD 3, Section 11-10-17w4, in the Taber district, and Weymarn Petroleum's No. 2, LSD 3, Section 7-6-1w5, on the Mill Creek structure in the Pincher Creek district. Successful completion of the Taber test will entitle the Alberta Pacific company to half of 5,500 acres held by the Cole-Hunter Syndicate, division to be effected by equal checkerboarding of acreage. A similar method will apply to some 4,700 acres held by Weymarn Petroleums, Ltd., in the Pincher Creek area; and may extend to 2,700 acres additional. At the Cole-Hunter well, the Alberta Pacific crews have succeeded in fishing two strings of pipe, aggregating 3,314 feet, and deepened the test from 3,319 feet. Water pumped in to displace the mud column brought considerable crude to the surface, about 7 bbls. being recovered. The oil is apparently in a brown sand, similar to that in the Texas and Oklahoma fields, but not previously met in Alberta drilling.

In Weymarn Petroleums' No. 2, Alberta Pacific Consolidated is resuming at 2,476 feet. The test has already encountered some wet gas, estimated up to 1,000,000 feet, and is thought to be not far from the Madison lime.

The arrangement with the Cole-Hunter Syndicate entitles Alberta Pacific Consolidated to drill a second test, and to take over the rotary drilling equipment on the site.

In the Sullivan Lake area, near Castor, 54 structure tests have been drilled in conjunction with Frontier Developments, Ltd. Agreements with Frontier Developments, Ltd., call for two more tests to be drilled by Alberta Pacific Consolidated, one on the Brazeau structure and the other on the Parker Creek structure; but these have been deferred till June, 1931, and may be postponed still further.

Government Production Figures

Official figures covering Alberta production for February show 144,682 bbls., including 137,260 bbls. of Turner Valley naphtha, 1,899 bbls. of Turner Valley light crude and 5,523 bbls. of Red Coulee crude. No heavy crude production is listed from Wainwright, Ribstone or Skiff. The February total compares with 159,588 bbls. in January.

Red Coulee Field

On the Montana end of the international Red Coulee structure, Askalta Oils' No. 1 Vollbrecht, SE Section 1-37-4w, is reported a dry hole.

On the Alberta end of the structure, Vanalta Oils' No. 4, Section 4-1-16w4 has pulled 10-inch string and run 6-inch preparatory to drilling into production from 2,444 feet. The test is checking higher than any of the producing group in this area. J. W. Elliott is handling the drilling contract.

Border Fields

In the Lethbridge district, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is reported fishing at 2,615 feet. The show of oil at Spring Coulee has encouraged the prospect of deep produc-

tion from this test, as the two are thought to lie on similar folds.

W. J. O'Haire and associates of Sunburst, Mont., are reported to have arranged for the drilling of three tests on the Reserve structure not far from the Mayland Southern test and on the Alberta side. O'Haire's No. 1 is tentatively located in SW Section 10-1-9w4, a mile east of Mayland Southern's No. 1. Tests are being primarily undertaken to develop gas production, the pipe line from Great Falls to the Reserve structure being within 4 miles of the Mayland well.

Medicine Hat Gasser

In the new northeast extension of the Medicine Hat gas field, the well recently completed by the Medicine Hat municipal gas department near Porter's Hill is reported to have increased its rock pressure to 500 pounds, the highest rock pressure ever obtained in the field. Open flow is around 2,766,000 feet a day.

On the Moose Mountain structure, Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is fishing at 3,184 feet. Just before the tools were lost, slight traces of oil were reported in the hole.

In the Monarch area west of Olds, Majestic-Cartier's No. 1, LSD 3, Section 36-31-7w5, is reported rigged up ready to spud in.

Hudson's Bay Tests

In the Keho Lake district, southern Alberta, Hudson's Bay Oil & Gas Co.'s Keho No. 1, LSD 2, Section 17-11-22w4, is reported resuming after cementing back to 3,175 feet on account of caving.

In the Castor district, Hudson's Bay's Paintearth No. 1, LSD 5, Section 27-39-15w4, is resuming at 3,628 feet after changing rig.

Saskatchewan Drilling

In eastern Saskatchewan, Simpson Oil Co.'s No. 1, Section 9-29-25w2, is reported to have encountered a small oil show at 2,730 feet.

Peace River

An important new test is being started by a British Columbia syndicate in the Peace River block of northeastern British Columbia. Location is behind the Catholic Hospital at Fort St. John, B.C., and the test spudded in toward the end of March. The structure is a northerly extension of the foothill belt of Alberta, and drilling is being carried on in an area previously untested.

Ontario Drilling

In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 7, Tim Fisher farm, Lot 14, Concession 3, is reported to have come in at 2,000 feet with an estimated gas flow of 2,000,000 feet. It is being shut in. It is the second producer secured by the Southern Ontario Gas Co. in the Newbury area, and is larger than No. 1, which had a reported open flow of 1,500,000 feet.

In northeastern Kent County, Black Bear Syndicate of Detroit is reported moving in drilling equipment for its No. 1 test near the junction of Black and Bear Creeks, north of Wallaceburg. It is expected to spud in next month.

In the D'Clute Field, Kent County, American Engineering Co.'s No. 4, Simpson farm, Lot 148, South Talbot Road, Raleigh Township, looks like a dry hole. No. 4 was a short distance west of the three previous producers.

NEW EAST INDIES CONCESSIONS

NEW YORK, Apr. 4.—The Dutch Government has concluded agreements for prospecting concessions in the Dutch East Indies with Nederlandsche Koloniale Petroleum Maatschappij (Standard Oil Co. of New Jersey), and Bataafsche Petroleum Maatschappij (Royal Dutch-Shell). Under these concessions, 6 areas are allotted to Koloniale, and 15 areas to Bataafsche Petroleum.

OIL BOARD APPROPRIATION

The Federal Oil Conservation Board is expected to continue activities through to June 30, 1932, as Congress appropriated and the President approved an appropriation of $20,000 for the expenses of the board during the new government year beginning July 1, 1931.

EAST TEXAS LIMITED TO 90,000 BBLS. PER DAY BY COMMISSION

AUSTIN, Tex., Apr. 4.—The Texas Railroad Commission on Saturday fixed the new crude oil production limit in Texas at 691,981 bbls. per day. Commissioner Pat Neff did not sign the order with the two other commissioners. Attorney Dan Moody, representing certain East Texas interests, gave notice that he had been instructed to file a suit to enjoin the enforcement of the order so far as it related to the new East Texas fields, which were limited to 90,000 bbls. per day, with a sliding scale upwards to 130,000 bbls. per day.

The Railroad Commission called oil men of the three districts of the East Texas Field to meet Wednesday and organize field committees to operate under the commission's plan of proration. Operators in the Henderson Field will meet in Henderson, and those of the Longview and Kilgore areas will hold their sessions at Longview. It is probable that by that time the protesting East Texans will have asked for their writ of injunction. However, the commission is proceeding as though that action will not be taken. The three umpires for the districts still are to be named, and the operators may make recommendations for them.

Defines Areas

The commission defined the various areas in East Texas as follows:

"The Henderson area shall include all acreage in Smith and Rusk Counties lying south of a line running east and west through the center of the present postoffice in the town of Overton, provided that a lease or property cut by such line shall be treated as lying wholly in the Henderson area if more than 50 per cent of its acreage lies south of said line, and otherwise wholly outside of such area.

"The Kilgore area shall include all acreage lying north of the north line of the Henderson area as above defined and south of the Sabine River.

"The Longview area shall include all acreage lying north of the Sabine River."

The allowable for each area is as follows:

Division of Fields

A tabulation of the allowable production for the East Texas Field is as follows:

Henderson, 40,000 bbls. from April 10 to May 1, 42,000 from May 1 to May 15, 44,000 from May 15 to June 1, 48,000 from June 1 to June 15 and 52,000 from June 15 to June 30.

Kilgore, 35,000 bbls. from April 10 to May 1, 37,500 from May 1 to May 15, 40,000 from May 15 to June 1, 44,000 from June 1 to June 15 and 48,000 from June 15 to June 30.

Longview, 15,000 bbls. from April 10 to May 1, 19,000 from May 1 to May 15, 22,500 from May 15 to June 1, 26,000 from June 1 to June 15 and 30,000 from June 15 to June 30.

Thus the total allowables for the periods will be as follows:

Ninety thousand barrels from April 10 to May 1, 98,500 from May 1 to May 15, 106,500 from May 15 to June 1, 118,000 from June 1 to June 15 and 130,000 from June 15 until the end of the proration period, June 30.

In the twin orders issued Saturday the total State allowable was fixed at 691,981 bbls. daily, compared with a total of 644,253 for the last proration period expiring April 1, an immediate increase of 47,638 bbls. The central proration committee recommended 676,058 bbls. and this was raised 15,833. Other fields were cut to avoid a heavy increase for the State.

Distribution of Allowables

As finally ordered, the several fields are given the following daily allowables, compared with those of the preceding period:

Panhandle, 37,000 bbls. against 40,000; North Texas 63,000 and 58,144; West Central, 33,500 and 25,000; West Texas, 213,431 and 245,927; East Central, 52,500 and 38,735; South Texas, 63,000 and 77,447; Gulf Coast, 140,000 and 155,000; East Texas, 90,000, prorated for the first time.

Applications for drilling permits in the new East Texas area continue to be filed, some 35 having been made this week from Rusk County alone, with 20 from Gregg and scattering locations in the nearby counties of Smith, Gilmer, Upshur, Nacogdoches and Morris. In contrast with this rush for permits in the new flush area, only two were received from Van Zandt County.

While applications were pouring in from East Texas, other kinds of petitions were received from Navarro, Young, Wichita, Wharton and Wilbarger Counties. With the price of oil bent downward, many marginal wells are being plugged and the counties named asked permission to plug, the wells being no longer profitable. The commission endeavored to nurse these wells in its new order by permitting unrestricted production from wells of 6 bbls. and less.

One declaration in the statewide order is that it was found necessary to limit production in East Texas, Yates and Reagan County fields so that "many thousands of marginal wells may be saved from destruction, thereby preventing great waste of oil and gas."

ELECTED PRESIDENT BY OIL GEOPHYSICISTS

Dr. Donald C. Barton

Doctor Barton was chosen president of the Society of Petroleum Geophysicists at the annual meeting at San Antonio, Tex.

KEOUGHAN PREDICTS GERMAN DEVELOPMENT

NEW YORK, Apr. 6.—German production of petroleum will develop within the next few years to a point where that country may become independent of foreign supply, said Sidney H. Keoughan, president of North European Oil Corp., who sailed for Bremen on the Europa to inaugurate an extensive drilling campaign in the Oldenburg district in the North German Basin.

Mr. Keoughan, formerly president of Continental Oil Co., said: "Oil is going to be produced in Germany in great quantities. The North German Basin has everything that our American oil fields have; the right structures and formations, a large number of known salt domes, oil seepages of unusual area, gas seepages, and wells now producing but only from shallow sands. There is marked similarity between the salt dome conditions in this basin and the American Gulf Coastal region.

"The geophysical work of our company has shown splendid results and I am returning to Germany to lay out a systematic campaign of drilling."

Dr. Baker Announces Third International Conference on Coal

Fuel technologists from the principal countries of Europe will attend the third international conference on bituminous coal at the Carnegie Institute of Technology, Pittsburgh, Pa., November 16 to 21, according to Dr. Thomas S. Baker, president of the institute and organizer of the conferences, the first of which was held in 1926. Following a visit of two months in Europe Doctor Baker says he has been assured of the interest and cooperation of fuel technologists on the continent. The success of the two preceding congresses, both held in Pittsburgh, demonstrated the importance of these meetings as occasions where outstanding scientists of the world may explain and discuss their discoveries. At both of the earlier meetings processes by which oil may be obtained from coal were subjects of major interest.

The program of the third meeting, embracing the more important topics in fuel technology now being considered throughout the world, is nearing completion. Since Doctor Baker's return from Europe he has devoted his time to arranging the American program as well as to corresponding with scientists in Europe. In America great progress has been made in research since the last conference in 1928, and the program this year wil contain announcements of significant developments made in research laboratories in the United States.

Special efforts are being made by the committee in charge to arrange inspection visits to the important research laboratories and industrial plants in Pittsburgh and other parts of the country in connection with the conference.

Prominent American men of affairs will assist Doctor Baker in an advisory capacity in organizing the meeting. The personnel of this advisory board follows: James A. Farrell, president of the United States Steel Corp.; John Hays Hammond, mining engineer; Samuel Insull, public utilities magnate; Dr. Frank B. Jewett, president of the Bell Telephone Laboratories, Inc.; A. W. Mellon, secretary of the United States Treasury and capitalist; F. A. Merrick, president of the Westinghouse Electric & Manufacturing Co.; Auguste G. Pratt, president of the Babcock & Wilcox Co.; H. B. Rust, president of the Koppers Co.; Matthew S. Sloan, president of the New York Edison Co.; Gerard Swope, president of the General Electric Co.; and Walter C. Teagle, president of the Standard Oil Co. of New Jersey.

DETERDING'S AIM IN RUMANIA

NEW YORK, Apr. 6.—Reports from Bucharest that Sir Henri Deterding, managing director of the Royal Dutch-Shell oil group, is in Rumania seeking to obtain an export oil monopoly were denied by Richard Airey, president of the Asiatic Petroleum Co. and representative of Sir Henri Deterding in the United States. Mr. Airey said Sir Henri's sole interest in visiting Rumania is to endeavor to persuade the Rumanian oil industry to curtail production in line with the curtailment program in effect in the United States.

EXPLORATIONS IN NEAR EAST

A French-Swiss group explored for oil in the northern province of Mazenderan, Persia, during 1930, but work consisted only of geological surveys and experimental drilling. The district between Kermanshah and Khaniquin is said to have been the scene of oil discoveries by Anglo-Persian engineers early in the year, while in December the press announced the discovery of oil on the steppes of Moghan in the province of Azerbaijan. An oil concession was reported signed by an American company in the late fall. Also, the representative of an American financial group appeared in Teheran to conduct negotiations for a concession in the Caspian province.

PRODUCTION, CONSUMPTION AND STOCKS OF OIL IN FEBRUARY

Prepared Under the Supervision of G. R. Hopkins, Petroleum Economics Division
E. B. Swanson, Chief Economist, Petroleum Economics Division

SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

	Feb., 1931	Jan., 1931*	Feb., 1930	Jan.-Feb., 1931	Jan.-Feb., 1930
NEW SUPPLY:					
Domestic production—					
Crude petroleum	60,645	65,991	74,243	126,636	153,964
Daily average	2,166	2,129	2,652	2,146	2,610
Natural gasoline	3,631	4,140	4,248	7,771	8,658
Benzol	172	184	229	356	469
Total production	64,448	70,315	78,720	134,763	163,091
Daily average	2,302	2,268	2,811	2,284	2,764
Imports—					
Crude petroleum	4,789	4,353	4,321	9,142	9,771
Refined products	2,917	3,601	3,224	6,518	7,030
Total new supply, all oils	72,154	78,269	86,265	150,423	179,892
Daily average	2,577	2,525	3,081	2,550	3,049
Increase in stocks, all oils	†3,472	†4,313	5,544	†7,785	10,211
DEMAND:					
Total demand	75,626	82,582	80,721	158,208	169,681
Daily average	2,701	2,664	2,883	2,681	2,876
Exports—					
Crude petroleum	1,710	1,919	1,731	3,629	3,539
Refined products	7,992	10,091	10,123	18,083	22,160
Domestic demand	65,924	70,572	68,867	136,496	143,982
Daily average	2,354	2,277	2,460	2,313	2,440
Excess of daily average domestic production over domestic demand	‡52	‡9	351	‡29	324
STOCKS (end of month):					
Crude petroleum—					
East of California	361,887	365,989	387,356	361,887	387,356
California§	142,093	142,757	151,980	142,093	151,980
Total crude	503,980	508,746	539,336	503,980	539,336
Natural gasoline at plants	692	606	572	692	572
Refined products	153,613	152,405	159,469	153,613	159,469
Grand total stocks, all oils	658,285	661,757	699,377	658,285	699,377
Days' supply	244	248	243	246	243
Bunker oil (included above in domestic demand)	3,622	3,544	4,065	7,166	8,288

*Revised. †Decrease. ‡Deficiency. §Includes residual fuel oil.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931 Total	Feb., 1931 Daily av.	Jan., 1931 Total	Jan., 1931 Daily av.	Jan.-Feb., 1931	Jan.-Feb., 1930
CRUDE PETROLEUM:						
Runs to stills—						
Domestic	61,524	2,197	65,586	2,116	127,110	142,973
Foreign	3,725	133	4,440	143	8,165	9,604
Total	65,249	2,330	70,026	2,259	135,275	152,577
Imports	4,789	171	4,353	140	9,142	9,771
Exports	1,710	61	1,919	62	3,629	3,539
MOTOR FUEL:						
Production	31,328	1,119	32,708	1,055	64,036	70,602
Imports	948	34	1,116	36	2,064	2,032
Exports	3,606	129	4,903	158	8,509	10,415
Stocks*	45,355	...	42,818	...	45,355	53,229
Domestic demand	26,133	933	26,844	866	52,977	52,252
KEROSENE:						
Production	3,171	113	3,560	115	6,731	8,887
Imports	.....	...	1	...	1	14
Exports	977	35	1,293	42	2,270	3,173
Stocks	6,477	...	6,555	...	6,477	8,565
Domestic demand	2,272	81	2,596	84	4,868	6,258
GAS OIL AND DISTILLATE FUELS:						
Production	6,697	239	7,834	253	14,531	12,664
Stocks	13,695	...	14,450	...	13,695	13,239
RESIDUAL FUEL OILS:						
Production	19,839	709	21,340	688	41,179	51,734
Stocks†	18,464	...	19,527	...	18,464	21,041
GAS OIL AND FUEL OIL:						
Production	26,536	948	29,174	941	55,710	64,398
Imports	1,956	70	2,471	80	4,427	4,909
Exports	2,555	91	2,980	96	5,535	6,130
Stocks	32,159	...	33,977	...	32,159	34,280
LUBRICANTS:						
Production	2,036	73	2,441	79	4,477	5,607
Imports	2	...	3	...	5	4
Exports	557	20	687	22	1,244	1,778
Stocks	10,911	...	11,013	...	10,911	9,283
Domestic demand	1,583	57	1,715	55	3,298	2,813
WAX (thousands of pounds):						
Production	38,640	1,380	42,560	1,373	81,200	103,320
Imports	3,035	108	2,645	85	5,680	4,371
Exports	23,503	839	22,063	712	45,566	51,087
Stocks	229,414	...	233,044	...	229,414	211,777
Domestic demand	21,802	779	22,690	732	44,492	34,419
COKE (short tons):						
Production	150,800	5,386	159,000	5,129	309,800	285,100
Stocks	1,052,000	.....	1,032,300	.....	1,052,600	755,500
ASPHALT (short tons):						
Production	165,800	5,921	147,300	4,752	313,100	409,100
Stocks	331,500	.....	295,000	.....	331,500	288,700
ROAD OIL:						
Production	115	4	102	3	217	531
Stocks	258	...	202	...	258	192
MISCELLANEOUS:						
Production	773	28	776	25	1,549	941
Stocks	678	...	660	...	678	552

*Includes motor fuel blends held at natural gasoline plants and in gasoline pipe line systems. †East of California.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931	Jan., 1931	Jan.-Feb., 1931
Motor fuel turned into lines	284	179	463
Motor fuel delivered from lines	224	162	386
Stocks in lines and working tanks end of month	*630	*570	*630

*Includes stocks set aside but not yet turned into the systems.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931 Total	Feb., 1931 Dy. av.	Jan., 1931 Total	Jan., 1931 Dy. av.	Jan.-Feb., 1931 Total	Jan.-Feb., 1931 Dy. av.
Production	3,631	130	4,140	134	7,771	132
Decrease in all stocks	42	1	....	...	....	...
Total	3,673	131	4,140	134	7,771	132
Blended at refineries	2,018	108	3,169	102	6,187	105
Run through pipe lines in Calif.	73	2	69	2	142	2
Blended at plants east of Calif.	13	1	13	1	26	1
Jobbers, exports, etc.	325	11	350	11	675	11
Increase in all stocks	....	...	330	11	288	5
Balance	244	9	209	7	453	8
Total	3,673	131	4,149	134	7,771	132

PRODUCTION OF CRUDE PETROLEUM BY STATES WITH CLASSIFICATION BY GRAVITY

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931 Total	Feb., 1931 Daily av.	Jan., 1931 Total	Jan., 1931 Daily av.	Jan.-Feb., 1931	Jan.-Feb., 1930
Arkansas	1,371	49	1,539	50	2,910	3,296
California—						
Long Beach	2,658	95	2,877	93	5,535	6,485
Santa Fe Springs	1,995	71	2,223	72	4,218	10,320
Rest of State	10,278	367	11,386	367	21,664	26,061
Total California	14,931	533	16,486	532	31,417	42,866
Colorado	126	5	139	5	265	292
Illinois	376	13	409	13	785	962
Indiana—						
Southwestern	66	3	69	2	135	154
Northeastern	4	...	4	...	8	7
Total Indiana	70	3	73	2	143	161
Kansas	3,031	108	3,102	100	6,133	6,246
Kentucky	524	19	546	17	1,070	1,250
Louisiana—						
Gulf Coast	830	30	842	28	1,672	1,163
Rest of State	1,189	42	1,244	40	2,433	2,279
Total Louisiana	2,019	72	2,086	68	4,105	3,442
Michigan	243	9	261	9	504	740
Montana	237	8	256	8	493	445
New Mexico	1,087	39	1,185	38	2,272	652
New York	274	10	285	9	559	644
Ohio—						
Central and Eastern	356	13	391	13	747	875
Northwestern	91	3	105	3	196	215
Total Ohio	447	16	496	16	943	1,090
Oklahoma—						
Oklahoma City	2,618	94	2,588	84	5,206	4,717
Seminole	4,071	145	5,002	161	9,073	16,415
Rest of State	7,413	265	7,578	244	14,991	16,719
Total Oklahoma	14,102	504	15,168	489	29,270	37,851
Pennsylvania	847	30	925	30	1,772	2,289
Tennessee	2	...	...	...	2	3
Texas—						
Gulf Coast	4,203	150	4,686	151	8,889	10,025
West Texas	6,960	249	7,887	524	14,847	26,117
Rest of State	8,210	293	8,766	283	16,976	17,800
Total Texas	19,373	692	21,339	688	40,712	47,942
West Virginia	346	12	379	12	725	909
Wyoming—						
Salt Creek	734	26	803	26	1,537	1,712
Rest of State	505	18	514	17	1,019	1,159
Total Wyoming	1,239	44	1,317	43	2,556	2,871
Total United States	60,645	2,166	65,991	2,129	126,636	153,964

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Feb., 1931	Jan., 1931	Jan.-Feb., 1931	Jan.-Feb. 1930
Oil	450	487	937	2,023
Gas	218	202	420	393
Dry	397	441	838	935
Total	1,065	1,130	2,195	3,357

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

STOCKS HELD BY REFINING COMPANIES, FEBRUARY 28, 1931

(Thousands of barrels of 42 U. S. gallons)

	Gasoline	Kerosene	Gas oil and fuel oil: Gas oil and distillate fuels	Gas oil and fuel oil: Residual fuel oils	Total
East Coast	7,685	1,209	2,735	4,434	7,169
Appalachian	1,748	215	746	498	1,244
Indiana, Illinois, Kentucky, etc.	4,763	666	1,021	1,695	2,716
Oklahoma, Kansas, Missouri	3,809	729	1,976	2,884	4,860
Texas	6,567	902	2,647	6,423	9,070
Louisiana and Arkansas	1,934	463	477	1,797	2,274
Rocky Mountain	1,940	300	132	733	865
California	16,267	1,988	3,961	(*)	3,961
Total	44,713	6,477	13,695	18,464	32,159
Texas Gulf Coast	4,995	822	2,284	3,889	6,173
Louisiana Gulf Coast	1,725	447	338	1,058	1,396

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

	Feb. 28, 1931	Jan. 31, 1931*	Feb. 28, 1930
EAST OF CALIFORNIA:			
At refineries by location—			
East Coast: Domestic	10,201	9,819	8,406
Foreign†	3,966	3,828	4,539
Appalachian	2,549	2,564	2,928
Indiana, Illinois, Kentucky, Michigan, etc.	2,495	2,579	3,277
Oklahoma, Kansas and Missouri	5,087	5,138	5,446
Texas: Inland	1,743	1,406	1,850
Gulf Coast: Domestic	6,900	7,440	10,669
Foreign†	366	393	299
Arkansas and Inland Louisiana	449	574	969
Louisiana Gulf Coast: Domestic	5,678	5,453	4,228
Foreign	771	833	1,320
Rocky Mountain	1,822	1,758	1,647
Total	42,027	41,785	45,578
At refineries by origin—			
Pennsylvania Grade	2,297	2,257	2,695
Other Appalachian (including Kentucky)	726	740	916
Lima, Northeast Indiana, Michigan	165	119	138
Illinois-Southwest Indiana	103	89	159
North Louisiana and Arkansas	3,591	3,836	4,732
West Texas and Southeast New Mexico	4,866	4,808	4,646
Oklahoma, Kansas, North Texas, etc.	16,012	16,350	17,183
Gulf Coast: Grade A	3,438	3,565	4,220
Grade B	3,904	3,209	3,043
Rocky Mountain	1,817	1,753	1,647
California	5	5	*1
Foreign†	5,103	5,054	6,158
Total	42,027	41,785	45,578
Pipe line and tank farm—			
Pennsylvania Grade	5,584	5,652	4,811
Other Appalachian (including Kentucky)	973	949	911
Lima, Northeast Indiana, Michigan	1,620	1,547	802
Illinois-Southwest Indiana	10,194	10,205	10,085
North Louisiana and Arkansas	19,562	19,865	21,381
West Texas and Southeast New Mexico	42,926	44,357	52,940
Oklahoma, Kansas, North Texas, etc.	189,331	191,534	200,254
Gulf Coast: Grade A	6,106	6,753	8,871
Grade B	11,414	11,691	11,210
Rocky Mountain	25,600	25,400	24,463
Total	313,310	317,954	335,728
Total refinery, pipe line and tank farm	355,337	359,639	381,306
Producers' stocks	6,550	6,350	6,050
Total crude east of California	361,887	365,989	387,356
CLASSIFICATION BY GRAVITY (approximately):			
East of California: Light	323,287	327,210	339,871
Heavy	32,050	32,329	41,435
California: Light	40,651	40,389	44,241
Heavy (including fuel)	101,442	102,368	107,739

*Revised. †Includes importers' stocks.

(Continued on Next Page)

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931	Jan., 1931	Jan.-Feb., 1931	Jan.-Feb., 1930
Crude oil	.....	.....	.....	.....
Refined products	1,577	1,508	3,085	4,230
Gasoline	1,116	1,189	2,305	3,254
Natural gasoline	260	136	396	.....
Kerosene	...	46	46	99
Gas oil	198	123	321	771
Diesel oil	...	...	...	65
Fuel oil	1	1	2	7
Lubricants	1	12	13	29
Asphalt	1	1	2	5

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, FEBRUARY, 1931*

	Completions			Total initial prod.	Average initial prod.	Drlg.
	Oil	Gas	Dry	(bbls.)	(bbls.)	Feb. 28
Texas	191	30	184	162,600	900	759
Darst Creek	4	..	..	4,500	1,100	2
Rusk-Gregg	17	..	2	55,600	3,300	54
West Texas	28	..	20	9,300	300	118
California	34	..	28	19,100	600	294
Long Beach	10	..	4	4,100	400	30
Playa Del Rey	15	..	..	4,100	300	25
Santa Fe Springs	..	..	1	.....	.....	1
Oklahoma	65	19	22	267,200	4,100	365
Oklahoma County	33	..	..	247,600	7,500	91
Pottawatomie and Seminole Counties	8	3	6	15,200	1,900	32
New Mexico	11	..	2	41,800	3,800	51
Lea County (Hobbs)	10	..	1	41,200	4,100	9
Other states	149	169	161	20,700	1,400	1,166
Total United States	450	218	397	511,400	1,100	2,635

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931		Jan., 1931		Jan.-Feb.,	Jan.-Feb.,
CRUDE PETROLEUM:	Total	Daily av.	Total	Daily av.	1931	1930
Imports	4,789	171	4,353	140	9,142	9,771
From Mexico	522	19	245	8	767	853
From Venezuela	2,386	85	2,600	84	4,986	6,312
From Colombia	1,711	61	1,280	41	2,991	2,118
From other countries	170	6	228	7	398	488
Exports—						
Domestic crude oil	1,710	61	1,919	62	3,629	3,539
To Canada	1,389	50	1,355	44	2,744	2,727
To other countries	321	11	564	18	885	812
Shipments	...	...	...	...	...	..
Foreign crude oil	...	...	...	...	...	...
REFINED PRODUCTS:						
Gasoline—						
Imports	948	34	1,116	36	2,064	2,032
Exports†	3,606	129	4,903	158	8,509	10,415
To United Kingdom	1,243	45	1,784	58	3,027	3,987
To France	515	18	777	25	1,292	1,661
To Canada	182	7	176	6	358	349
To other countries	1,663	59	1,996	64	3,659	5,160
Shipments	3	...	170	5	173	167
Kerosene—						
Exports	977	35	1,293	42	2,270	3,173
To China	116	4	202	6	318	362
To United Kingdom	312	11	333	11	645	497
To other countries	546	20	740	24	1,286	2,277
Shipments	3	...	18	1	21	37
Gas oil and fuel oil—						
Imports	1,956	70	2,471	80	4,427	4,909
Exports	2,555	91	2,980	96	5,535	6,130
To Chile	311	11	405	13	716	632
To Panama	254	9	416	13	670	616
To other countries	1,639	59	1,914	62	3,553	4,272
Shipments	351	12	245	8	596	619
Lubricants—						
Exports	557	20	687	22	1,244	1,778
To United Kingdom	124	5	62	2	186	430
To France	53	2	212	7	265	270
To other countries	374	13	408	13	782	1,065
Shipments	6	...	5	...	11	13
Wax (thousands of pounds)—						
Imports	3,035	108	2,645	85	5,680	4,371
Exports	23,503	839	22,063	712	45,566	51,087
To United Kingdom	5,048	180	5,798	187	10,846	9,826
To Italy	4,833	173	2,627	85	7,460	10,045
To other countries	13,621	486	13,635	440	27,256	31,213
Shipments	1	...	3	...	4	3

*From Bureau of Foreign and Domestic Commerce. †Includes benzol—17,000 bbls. in February.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931		Jan., 1931		Jan.-Feb.,	Jan.-Feb.,
FIELD:	Total	Daily av.	Total	Daily av.	1931	1930
Appalachian—						
Pennsylvania Grade	1,641	59	1,779	57	3,420	4,327
Other (including Kentucky)	708	25	747	24	1,455	1,653
Lima, Northeast Indiana, Michigan	338	12	370	12	708	962
Illinois-Southwest Indiana	442	16	478	15	920	1,116
Mid-Continent—						
North Louisiana and Arkansas	2,560	91	2,783	90	5,343	5,575
West Texas-Southeast New Mexico	7,999	286	9,024	291	17,023	20,669
Other (Oklahoma, Kansas, North Texas, etc.)	25,343	905	27,036	872	52,379	61,897
Gulf Coast:						
Grade A	1,607	58	2,209	72	3,816	5,216
Grade B	3,426	122	3,319	107	6,745	5,972
Rocky Mountain	1,650	59	1,760	57	3,410	3,708
California	14,931	533	16,486	532	31,417	42,869
Total	60,645	2,166	65,991	2,129	126,636	153,964
CLASSIFICATION BY GRAVITY (approx.):						
Light crude	54,306	1,940	58,562	1,889	112,868	135,741
Heavy crude	6,339	226	7,429	240	13,768	18,223

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931		Jan., 1931		Jan. Feb.,	Jan.-Feb.,
	Total	Dy.av.	Total	Dy.av.	1931	1930
Straightrun gasoline	15,465	553	15,638	504	31,103	37,390
Cracked gasoline	12,262	438	13,285	429	25,547	24,962
Natural gasoline:						
Blended at refineries	3,018	108	3,169	102	6,187	6,904
Blended at plants*	13	1	13	1	26	51
Run through pipe lines†	73	2	69	2	142	377
Jobbers, exports, etc.	325	11	350	11	675	450
Benzol produced‡	172	6	184	6	356	469
Total motor fuel	31,328	1,119	32,708	1,055	64,036	70,603

*East of California. †To refineries in California. ‡Estimated.

RUNS TO STILLS AND OUTPUT OF REFINERIES, FEBRUARY, 1931

(Thousands of barrels of 42 U. S. gallons)

	Crude oil			Unfinished oils	Natural gasoline	Total
Input—	Domestic	Foreign	Total	rerun		input
East Coast	8,910	3,559	12,469	865	229	13,563
Appalachian	2,741	....	2,741	113	36	2,890
Indiana, Illinois, Kentucky, etc.	7,894	....	7,894	225	224	8,343
Oklahoma, Kansas, Missouri	7,866	....	7,866	241	420	8,527
Texas	16,163	35	16,198	287	765	17,250
Louisiana and Arkansas	3,865	131	3,996	375	258	4,629
Rocky Mountain	1,350	....	1,350	280	91	1,721
California	12,735	....	12,735	158	*1,068	13,961
U. S. total	61,524	3,725	65,249	2,544	3,091	70,884
Texas Gulf Coast	11,832	35	11,867	285	507	12,659
Louisiana Gulf Coast	2,538	131	2,669	115	165	2,949

	Gas oil and fuel oils						
Output—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Total	Lubricants	Wax (thousands of pounds)
East Coast	5,169	465	1,319	4,598	5,917	650	14,560
Appalachian	1,241	263	265	385	650	314	7,340
Indiana, Illinois, Kentucky, etc.	4,273	355	839	1,352	2,191	234	5,320
Oklahoma, Kansas, Missouri	4,453	532	822	1,626	2,448	191	2,520
Texas	7,554	795	1,429	4,900	6,329	417	3,920
Louisiana and Arkansas	1,853	307	368	1,278	1,646	62	2,520
Rocky Mountain	855	76	67	285	352	31	1,960
California	5,420	378	1,588	5,415	7,003	127	....
U. S. total	30,818	3,171	6,697	19,839	26,536	2,036	38,640
Texas Gulf Coast	5,392	640	1,231	3,214	4,445	392	3,640
Louisiana Gulf Coast	1,286	288	288	783	1,071	43	2,520

			Other finished products				
Output (continued)—	Coke (tons)	Asphalt (tons)	Road oil	Miscellaneous	Total	Unfinished products	Shortage
East Coast	12,300	58,900	27	39	66	355	502
Appalachian	2,400	7,300	...	35	35	195	112
Indiana, Illinois, Kentucky, etc.	51,500	36,300	3	205	308	353	147
Oklahoma, Kansas, Missouri	25,500	.....	...	112	112	367	285
Texas	41,600	8,500	2	14	16	824	1,042
Louisiana and Arkansas	7,800	21,300	...	128	128	322	148
Rocky Mountain	9,800	200	35	25	60	221	68
California	400	33,300	48	115	163	340	335
U. S. total	150,800	165,800	115	773	888	2,977	2,639
Texas Gulf Coast	34,800	8,500	2	1	3	740	812
Louisiana Gulf Coast	7,100	12,000	...	112	112	14	56

*Includes 73,000 bbls. run through pipe lines.

GASOLINE PRODUCTION BY THE VARIOUS METHODS—FEBRUARY, 1931

(Thousands of barrels of 42 U. S. gallons)

	Straightrun		Cracked		Natural gasoline		Grand
	Total	%	Total	%	Total	%	total
East Coast	2,374	46	2,566	50	229	4	5,169
Appalachian	765	62	440	35	36	3	1,241
Indiana, Illinois, Kentucky, etc.	1,971	46	2,078	49	224	5	4,273
Oklahoma, Kansas, Missouri	2,510	56	1,523	34	420	10	4,453
Texas	3,580	47	3,209	43	765	10	7,554
Louisiana and Arkansas	667	36	928	50	258	14	1,853
Rocky Mountain	378	44	386	45	91	11	855
California	3,220	59	1,132	21	1,068	20	5,420
Total	15,465	50	12,262	40	3,091	10	30,818
Texas Gulf Coast	2,160	40	2,725	51	507	9	5,392
Louisiana Gulf Coast	443	34	678	53	165	13	1,286

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA

(Thousands of barrels of 42 U. S. gallons)

	Feb., 1931		Jan., 1931		Jan.-Feb.,	Jan.-Feb.,
Domestic petroleum by fields of origin:	Total	Daily av.	Total	Daily av.	1931	1930
Appalachian—						
Pennsylvania Grade	1,670	60	1,825	59	3,495	3,989
Other (including Kentucky)	698	25	754	24	1,452	1,619
Lima, Northeast Indiana, Michigan	217	8	170	5	387	835
Illinois-Southwest Indiana	440	16	527	17	967	1,514
Mid-Continent—						
North Louisiana and Arkansas	3,123	111	3,518	114	6,641	6,236
West Texas-Southeast New Mexico	9,184	328	10,610	342	19,794	21,088
Other (Oklahoma, Kansas, North Texas, etc.)	27,739	991	28,336	914	56,075	60,688
Gulf Coast—						
Grade A	2,376	85	2,277	74	4,653	5,303
Grade B	3,001	107	3,321	107	6,322	6,300
Rocky Mountain	1,417	50	1,430	46	2,847	3,632
California	.....	...	.....	...	.....	46
Total demand	49,865	1,781	52,768	1,702	102,633	111,250
Exports	1,061	38	1,067	34	2,128	2,127
Domestic demand	48,804	1,743	51,701	1,668	100,505	109,123
Foreign petroleum	4,740	169	3,152	101	7,892	9,698
Total domestic demand east of Calif.	53,544	1,912	54,853	1,769	108,397	118,821

		Wax (thousands of pounds)			Coke
	Lubricants	Crude scale	Refined	Total	tons
East Coast	3,489	33,970	18,004	51,974	33,900
Appalachian	1,344	24,914	3,264	28,178	5,700
Indiana, Illinois, Kentucky, etc.	1,227	22,323	2,167	24,490	79,900
Oklahoma, Kansas, Missouri	838	1,347	2,097	3,444	78,800
Texas	2,520	1,021	12,144	13,165	568,400
Louisiana and Arkansas	201	80,445	1,497	81,942	58,800
Rocky Mountain	211	24,636	1,585	26,221	115,800
California	1,081	.....	.....	.....	111,300
Total	10,911	188,656	40,758	229,414	1,052,600
Texas Gulf Coast	2,410	858	12,144	13,002	517,400
Louisiana Gulf Coast	180	80,445	1,497	81,942	58,600

		Other finished products			Unfinished oils		
	Asphalt (tons)	Road oils	Miscellaneous	Total	Natural gasoline	Other	Total
East Coast	128,200	40	43	83	161	9,488	9,649
Appalachian	17,300	...	76	76	15	1,444	1,459
Indiana, Illinois, Kentucky, etc.	74,900	...	242	65	65	5,024	5,089
Oklahoma, Kansas, Missouri	4,200	5	22	27	66	2,919	2,985
Texas	6,800	10	10	20	305	15,802	16,107
Louisiana and Arkansas	53,400	...	9	9	20	2,553	2,573
Rocky Mountain	4,000	112	31	142	1	1,759	1,760
California	42,700	91	245	336	1,341	†8,802	10,143
Total	331,500	258	678	936	1,974	47,791	49,765
Texas Gulf Coast	6,700	10	4	14	293	14,384	14,677
Louisiana Gulf Coast	37,600	...	6	6	9	1,895	1,904

*Included with heavy crude. †Includes 2,788,000 bbls. tops.

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OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

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WOULD APPRECIATE communication with reliable drilling contractors and oil operators. New York correspondence invited. Assistance needed in development of proven acreage and structural wildcat territory. References exchanged. M. R. Mead, Petroleum Geologist, Moberly Hotel, Longview, Texas.

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SEE PAGE 87

On page 87 of this issue you will find one of the many testimonials given to us by constant users of our Classified pages, proving beyond a doubt the result producing ability of the Classified Section of

THE OIL AND GAS JOURNAL
Tulsa Okla.

CLASSIFIED WANTS

Create and Build Sales

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CALL FOR DRILLING CONTRACTS

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ERNEST R. TENNANT,
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P. O. Box 211 Phone 392.

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EAST TEXAS LEASES and Royalties, Near C. M. (Dad) Joiners new Enterprise. Wonderful opportunity. A. L. Farrell, Grand Saline, Texas.

EAST TEXAS OIL LEASE and 128th Royalty on forty-three acres eastern edge Pure Block, Wood County, now core drilling. Surrounded by blocks now forming with drilling contracts and bonus priced $10 for lease, $10 for royalty, both for $15, subject to prior sale.
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Harry A. George
Oil Royalties
428 Exchange National Bank Bldg.,
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EAST TEXAS ROYALTIES on geology head of production with wildcats drilling close. Sensible prices and individual direct deeds. See maps and geology and pick your own play. Wells drilling make promptness important. R. R. Fisk, 1214-C, Wichita Falls, Tex.

ROYALTY ON STRUCTURE, vast spread under drilling well now spudding northeast of Rusk, Gregg area, on theoretical shore line, near Sinclair big block Harrison County, East Texas. Between Moncrief Bateman and Caddo Field, being around 15 miles west of Caddo area. Many wells to start in Harrison. Investors, brokers in Canada and U. S. write or wire James R. Haynes, Grantville, Kans.

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EAST TEXAS ROYALTIES—Gregg, Rusk, Cass, Marion, Harrison Counties. Big list. Harry Haynes, Grantville, Kans.

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BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

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TULSA OKLAHOMA

ROYALTIES—PRODUCTION

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FOR SALE—¼ royalty under 4,000-acre block, Concho County, near two wells now drilling. H. B. Opp, Menard, Texas.

FOR SALE
⅛ Royalty S½ SE¼ 31-13-4E Lease and ½ R. in SW¼ of NE¼ of Sec. 14-14-4E; ¼ Royalty on N½ NW 8-14-4, Lincoln County. Write Box E-437, The Oil and Gas Journal, Tulsa, Okla.

ROYALTIES ahead of drilling wells, major company, core-drilled structures. Write William Hallam, Jr., 214 Patterson Bldg., Denver, Colo.

EAST TEXAS royalties and leases ahead of production in trend of development. Wire or write for latest offerings or tell us what you want. Wm. T. Earnest & Co., Wilson Bldg., Dallas, Tex.

OPPPORTUNITY—$25 buys 1/512 landowners royalty in tract near production; Rusk County, Texas, field. Lewis De Geurin, Box 112, Overton, Tex.

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Form shows rental record, mortgage record, expenditures, sales record, tax record, well record, monthly production record. All on one sheet; size 8½"x11"; punched to fit standard ring binder. Convenient for desk or brief case. Sheets—$5 per 100; fine leather binder, $5.25; leather tabbed index, $1.20. Order this complete record today. Know what you own and its condition.

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TURN TO PAGE 115 FOR ADDITIONAL CLASSIFIED ADS.

More Cheerful Sentiment Seen in East

Cut in Diesel Oil Prices Features Market and Weakness in Other Products Is Evident, but Improvement Believed Near

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Apr. 6.—A reduction of 10 cents per barrel in Diesel oil prices featured the East Coast market last week, and while continued weakness was evident in gasoline and other products, market sentiment appeared more cheerful, and it was believed that with settlement of crude production difficulties in sight, and a definite curtailment of imports of crude petroleum and gasoline assured for the next 90 days, market conditions should show early improvement.

The cut in Diesel oil had been looked for, and market interest during the week continued to center in the crude production situation. Adjustment of overproduction difficulties in East Texas, it is believed here, is definitely in sight, and with importing companies pledged to curtail their shipments in line with domestic prorating activities, eastern oil men believe that real progress has been made toward setting the industry's feet on the first rungs of the ladder leading back to stability.

The eastern refinery gasoline market is still a sore spot, but leading factors in the local market are inclined to the belief that current conditions are but temporary, and that price cutting activities will diminish as the season progresses. There is still a spread of 1½ cents in the posted tank car price for U. S. Motor gasoline in this territory, but in view of the fact that even the inside quotation is coming in for considerable showing it is evident that the top price is entirely nominal.

The market took on a holiday aspect at the week-end, a number of oil companies closing down for Good Friday and giving their employes an additional holiday on the Saturday following.

Refinery Gasoline

The current quotation for U. S. Motor in tank car lots at refineries ranges 6½ to 8 cents per gallon, with the top quotation entirely nominal. The market is by no means strong at 6½ cents, and jobbers are looking for concessions when coming into the market to contract ahead. Offerings of motor gasoline in quantities has been reported during the week as low as 5⅞ cents per gallon, although the general inside appears to be 6¼ cents on spot transactions, with the larger interests refusing to go under the posted level of 6½ cents.

Continued cool rainy weather has militated somewhat against gasoline consumption throughout the territory during the week just ended, but the spring season is beginning to hit its stride nevertheless, and refiners look for steadily increasing gallonage as the season progresses.

Independent marketers are showing considerable uneasiness over the current position of the market at refineries, and this is reflected in their attitude toward forward committments. Buyers in most instances are keeping their storage half full or better and are keeping a car or two rolling at all times to protect themselves against shortages, but an increasing tendency is being shown by many marketers to "shop" the market in an effort to bring to light concessions when placing their business.

There is continued sharp competition for business in the refinery market, and until conditions show a radical change for the better, it is expected that the buyers will continue "in the saddle."

Tank Wagon Gasoline

No general revisions in tank wagon and service station quotations developed during the week, but recent reductions in refinery prices have given independent marketers a wider margin to work on, and considerable price cutting is still reported in many sections of the territory.

A general cut of at least 1 cent per gallon in tank wagon prices is looked for in the East, unless weather conditions should prove ideal and the spurt in consumption materially exceed expectations. Marketers are meeting "local competition" generally, and it is not believed that the larger companies will be content to permit the markets to remain in their present chaotic condition much longer.

Gasoline sales in New York State showed an increase of approximately 7½ per cent during January of this year, according to returns on the state gasoline tax law, and it is believed that this rate of increase has been maintained since that time.

Marketers profess to see a ray of sunshine in current business depression in this territory in the theory that recent unfavorable business conditions have been such as to react materially against the business of many small filling stations which have been able to barely "hang on" during the past few years through price cutting activity. The end of the depression period, it is believed by many, will witness considerable reduction in the number of filling stations in operation in East Coast territory, and any diminution in the substantial oversupply of retail facilities in the area should react to the advantage of the industry as a whole.

Kerosene

The position of the refinery kerosene market continues weak. Posted quotations for 41-43 water white in tank car lots at the refineries remain at 6 cents per gallon on the part of the leading interests, but sellers are freely going to 5¾ cents per gallon on competitive business, and it would not be difficult to shade the 5¾ cents quotation if a buyer were to come into the market with a firm bid for a large quantity.

Consumption of kerosene is picking up slowly, and while current demand is not as active as some marketers had looked for, the situation, on the whole, is satisfactory, it is said. No changes in tank wagon kerosene quotations developed during the week.

Diesel Oil

The market was featured during the week by a general reduction of 10 cents per barrel announced by Standard Oil Co. of New Jersey, the cut being effective April 1. The revision brings the market down to a uniform price of $1.75 per barrel at all Atlantic Coast points. Norfolk, Va., which was previously posted at 20 cents per barrel in excess of prevailing prices at other East Coast ports, was cut 30 cents by the Jersey company, bringing the quotation at that point in line with the remainder of the territory. Other refiners followed in the reduction.

The lowering in the posted Diesel oil quotation automatically brings about revisions in contracts with the large marine consumers of these oils, 1931 contracts protecting buyers against any lowering in prices, and likewise protecting the buyer against advances beyond a certain point.

Consumption of Diesel oil thus far in the year has been fully up to expectations in the East, and is reported to be slightly in excess of that for the comparable period last year, the current reduction coming merely as a reflection of lowered production costs, rather than as a step to hold business against competition. California Diesel oil has come into East Coast markets in some quantities during recent months, but with few exceptions, this oil has been brought East by large integrated companies here and has gone into consumption through regular marketing channels, with no disturbance to the existing spot market.

Bunker Oil

The reduction effected in Diesel oil prices during the week was not accompanied by any revision in the posted price for bunker "C" oil and the market for this grade remains unchanged at $1.05 per barrel, in bulk, f.o.b. East Coast refinery terminals, with no immediate change contemplated, according to leading interests.

There has been some increase in the volume of shipping moving in and out of East Coast ports during the first quarter of the year, and while considerable tonnage normally active in this trade is still laid up, it is reported that volume of business in bunker oil during the first quarter of 1931 has run ahead of that for the closing quarter of 1930.

Industrial demand for heavy fuel oils has picked up slightly during the past week, refiners report, but the market is still in rather easy position, and some price cutting is reported in portions of the eastern market.

Gas Oil

Seasonal slackening in gas oil demand is reported and the market continues in soft position. The posted price for 28 plus recycled oil is unchanged at 5¼ cents per gallon in tank car lots at refinery terminals, with the bulk of the business going through at 4¼ cents and upwards. It is reported, however, that odd lots of gas oil can be picked up in the East at as low as 4 cents per gallon.

Demand for low grade gas oils for use as fuel for domestic heating plants has fallen away, and refiners believe that this business is about at an end for the season, with lower prices in sight for next season.

Gas manufacturing companies are drawing stocks of gas oil against contract in fair volume, but this demand is likewise expected to show a decrease shortly, with the advent of daylight saving in many sections of the East.

Paraffin Wax

While price changes were lacking in the wax market during the week the market tone continued easy, and sellers were reported to be fractionally shading quotations on some of the lower melting points. Demand from domestic consumers continued limited, the expected volume of contracting for the second quarter of the year having failed to develop as extensively as sellers had hoped for. Export inquiry likewise continued along light lines during the week.

Refiners made some progress with their curtailment program during February, according to the Department of Commerce report issued during the week. February production was 38,640,000 pounds, against 42,560,000 pounds during January, with stocks on hand at the end of the month 229,414,000 pounds, against 233,044,000 pounds as of January 31, and 211,777,000 pounds at the close of February last year.

Lubs

Refiners are holding down lub oil production in many sections of the East, but despite this curtailment, stocks continue substantially larger than a year ago, and the market remains in weak position. Stocks held by refiners at the close of February were 10,911,000 bbls., as compared with 11,013,000 bbls. at the close of the previous month and 9,289,000 bbls. as of February 28, 1930. February production of lub oils amounted to 2,036,000 bbls., as compared with 2,441,000 bbls. in the previous month.

There was a limited inquiry for cylinder oils during the week, but buyers in most instances were taking stocks only in a small way for immediate delivery, and little interest was shown in forward offerings. Stocks of lub oils held by compounders and blenders are reported to be considerably under normal for this season of the year, however, and it is expected that the advent of heavier consumption during the current quarter will force buyers into the market for replacement stocks in considerable quantity.

No price changes developed during the week on either cylinder oils or pale and red oils, with demand for the latter likewise of small amount.

Export Market

No business developed in the Gulf market during the week, and quotations were entirely nominal on all grades of gasolines. Navy was reported available down to 4 cents per gallon at the Gulf during the week, but this price was not confirmed, as was the case with rumors of low prices on other grades. French buyers who normally draw gasoline stocks from the Gulf in large quantities are covered up to the end of June by contracts placed in Rumania, it is reported, and aside from the regular movement of stocks for the account of foreign marketing subsidiaries of American integrated companies, little activity is looked for either at the Gulf or in the California export market during the balance of the first half of the year.

Kerosene was likewise in dull position at the Gulf last week, with sellers quoting the market nominally unchanged at 4¼ cents for prime white and 5¼ cents for water white.

A little inquiry for Venezuelan crude was reported during the period, but little of this oil is available and sellers thus far have not been inclined to meet the bids of prospective buyers. It is possible, however, that the curtailment of shipments of Venezuelan crude into the United States for the current quarter may result in a more liberal supply of Venezuelan crude in the open market.

No activity in Mexican crude for export was reported during the week, and the market for these oils continues easy, in line with the lower quotations which have been put into effect on crudes produced in United States fields during the past few weeks.

Petroleum Exports

Export movement of refined products from the local market again eased off during the week ended March 28, continuing the evidences of irregularity which has been so pronounced here since the turn of the year.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Mar. 28	Mar. 21	Mar. 14
Gasoline	110,000	605,000	230,000
Naphtha	105,000	500,000	290,000
Kerosene	85,000	49,000	115,000
Fuel oil	.....	44,000	275,000
Lubricating oil	940,000	2,285,000	830,000
Petroleum, refined	340,000	3,320,000	608,000
	Pounds		
Petrolatum	13,000	35,000	53,000
Paraffin wax	1,875,000	1,515,000	1,520,000
Refined	.....	.....	.....
Scale	430,000	250,000	315,000
Lubricating grease	710,000	1,000,000	500,000

New business was not along active lines during the week, and there was relatively little inquiry shown for most products. Business in cased gasoline and kerosene locally continues to suffer from the competition of bulk oils in foreign markets, and refiners are apparently reconciled to a gradual falling off in this branch of their operations.

Operators here have been looking for a revival in export buying of lub oils and paraffin wax, but thus far business has not developed to the expected volume, and it appears probable that little pick up in demand can be looked for until the domestic crude oil situation is adjusted and buyers have something more definite to

go on in looking ahead for their future refined products requirements.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended March 28 totaled 1,266,000 bbls., a daily average of 180,857 bbls., compared with 2,014,000 bbls., a daily average of 287,714 bbls. for the previous week and a daily average of 231,357 bbls. for the four weeks ended March 28. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	183,000
Boston	28,000
New York	773,000
Philadelphia	72,000
Others	147,000
Total	1,203,000
Daily average	171,857
At Gulf Coast Ports—	
Galveston district	63,000
Total	63,000
Daily average	9,000
At all United States Ports—	
Total	1,266,000
Daily average	180,857
Daily average four weeks	231,357

Distribution of total imports is as follows:

Crude	609,000
Gasoline	242,000
Fuel oil	415,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended March 28 totaled 527,000 bbls., a daily average of 75,286 bbls., compared with 220,000 bbls., a daily average of 31,429 bbls. for the previous week and a daily average of 61,500 bbls. for the four weeks ended March 28. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	155,000
New York	160,000
Philadelphia	117,000
Others	95,000
Total	527,000
Daily average	75,286
At Gulf Coast Ports—	
All ports	None
At Atlantic and Gulf Coast Ports—	
Total	527,000
Daily average	75,286
Daily average four weeks	61,500

Distribution of total California oil receipts is as follows:

Gasoline	454,000
Gas oil	73,000

Shipments of California refined products for Atlantic and Gulf Coast ports during the week (with identity of owner of tanker moving the oil where such owner is an oil company) follow:

To New York—96,800 bbls. of gasoline on the Dixie Arrow (Standard Oil Co. of New York).

To Philadelphia—116,200 bbls. of gasoline on the Sun (Sun Oil Co.).

To Wilmington, N. C.—73,400 bbls. of gasoline on the Roanoke (The Texas Company).

To Norfolk—73,000 bbls. of gasoline on the Pennsylvania (The Texas Company).

Charter Market

The tanker charter market was extremely quiet during the past week, say Funch, Edye & Co., Inc., in their weekly summary, and with the exception of Russian interests, all other charterers were indifferent. Two clean vessels were closed from Black Sea to the Continent at 7/- and there is further business offering but due to the volume of available tonnage, there is no possibility of any improvement in rates. Several small black oil carriers can be placed from Black Sea to Continent and Mediterranean; there is also inquiry for crude oil carriers Gulf to U.K./Continent, April/May, but charterers prefer to wait. The American coastwise and intercoastal trades are quiet with no demand for tonnage.

Fixtures reported during the week were as follows:

Tankers

Nor stmr Belridge, 9,000 tons cargo, crude, Aruba to Dakar, 7/-, April.

Br Stmr Oiltrader, 7,500 tons cargo, clean, Black Sea to U.K./Continent, 7/-, April.

Nor M/S Solstad, 8,500 tons cargo, clean, Black Sea to U.K./Continent, 7/-, April.

Am Stmr Cities Service Empire, 75,000 bbls., dirty, Gulf/Venezuela or Aruba to North Hatteras, 15c, April (recently).

Am Stmr Hagan, 70,000 bbls., dirty, Gulf/Venezuela or Aruba to North Hatteras, 15c, April (recently).

GILLETTE HILL GOES TO MOODY-SEAGRAVES

Gillette Hill has resigned as vice president of Phillips Petroleum Co. to become active vice president of Moody-Seagraves-Morgan Corp. of Houston, Tex.

Mr. Hill was prominent in the affairs of the Waite Phillips Co. up to the time the company was sold to a group of New York bankers and upon the organization of the Philmack Co. he joined that company which was later absorbed by the Independent Oil & Gas Co. Mr. Hill was a vice president of the Independent, which was combined with the Phillips Petroleum Co. and went over to the combined organization as a vice president.

DAN C. STEELE, SR., DIES

Dan C. Steele, Sr., of Houston, Tex., drilling and cleaning out tools superintendent for the Venezuela Gulf Oil Co., died at Cabimas, Venezuela, Sunday evening, March 29, of apoplexy.

Mr. Steele had been in the employ of the Venezuela Gulf Oil Co. from March, 1929, and, prior to that, had been with the Mexican Gulf Oil Co. in Mexico from August 17, 1917, to date of transfer to the Venezuela organization of the Gulf. While with the Mexican Gulf Co. he served as warehouseman, field office manager, and material foreman. Prior to his connection with the Mexican Gulf Co., Mr. Steele was superintendent with El Aguila in Mexico in 1912 and 1913, and later with the Penn-Mex Co. in Mexico. He was born at Pennington, Tex., December 23, 1871. His body is now being brought to the United States, and burial will take place at Houston, Tex.

PANHANDLE GEOLOGISTS

AMARILLO, Tex., Apr. 4.—The Panhandle Geological Society held its annual meeting at Amarillo on Monday evening, and elected the following officers: J. D. Thompson, Jr., consulting geologist, Amarillo, president; H. T. Morley, first vice president; J. V. Terrill, second vice president, and A. R. Kautz, secretary-treasurer. The annual meeting was preceded by a dinner given H. E. Crum, district geologist for the Skelly Oil Co., who has left for Charleston, W. Va., to accept employment with the Columbia Carbon Co., and for Thad Hoke, district geologist for the Delmar Oil Co., who has moved to San Antonio.

KANSAS GEOLOGISTS TO MEET

The next meeting of the Kansas Geological Society will be held in Lawrence, April 17 and 18. The monthly meeting scheduled for Wichita will not be held. The program includes a paper by Dr. Raymond C. Moore on geosynclines and oil provinces, a paper by John L. Rich on "The Origin of Kansas Oil," and symposium on "The Age of Oswald," led by J. W. Ockerman.

Statement of the Ownership, Management, Etc., of THE OIL AND GAS JOURNAL April 1, 1931

(This statement is published in compliance with the Act of August 24, 1912.)

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Known bondholders, mortgagees and other security holders holding 1 per cent or more of the total amount of bonds, mortgages or other securities: None.

JOHN M. EGAN, General Manager.

Sworn to and subscribed before me this 6th day of April, 1931.

H. R. BARNETT, Notary Public.

My commission expires October 3, 1933.

CLASSIFIED WANTS

(Continued from Page 113)

POSITIONS WANTED

GEOLOGISTS, now employed, wishes change with independent operator on interest basis in East and Central Texas. Address Box E-432, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE engineer, six years' experience, familiar with design of fractionation and distillation equipment, desires position with refining company as designing engineer or chief draftsman. Write Box E-436, The Oil and Gas Journal, Tulsa, Okla.

SCOUT AND LANDMAN. 15 years in Texas fields. Good references. Wide acquaintance with oil men. Experience in production and drilling. Go anywhere. Address Box E-440, The Oil and Gas Journal, Tulsa, Okla.

NATURAL gas executive or superintendent for any department of the business. Eighteen years covering production, main line and distribution, both construction and operation, measurement, public relations and franchises and complete management. Good reasons for making change, best references. Desire permanent place with good future. Write Box E-443, The Oil and Gas Journal, Tulsa, Okla.

MIDDLE-AGED business man, just relieved from position on account of merger, will consider proposition from a reliable concern wanting office executive or business manager. Any legitimate line of business will be considered. Address Box E-444, The Oil and Gas Journal, Tulsa, Okla.

ORGANIZER, promoter, secretary-stenographer; thoroughly experienced, reliable, trustworthy gentleman, 39; personality, integrity, ability; with sedan (knowing all states), desires position (go anywhere). Address Earl Biechel, general delivery, Beaumont, Tex.

EXPERIENCED traveling foreign representative desires connection with responsible oil company in sales department, excellent references; available now. Write Box E-442, The Oil and Gas Journal, Tulsa, Okla.

ATTENTION WILDCAT PROMOTERS

Standard drilling crew will contract their labor for interest, plus living expenses. Send proposition to Box E-447, The Oil and Gas Journal, Tulsa, Okla.

EDUCATIONAL—Years of field experience. Best fitted for SAFETY or other personal contact work. Employed now. Answer Box E-449, The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION AND GEOLOGICAL ENGINEER: 12 years' experience. Capable of directly supervising any production or drilling problem. Chief geologist and assistant to vice president of large company. Desires connection. References. Consider interest and salary proposition. Write Box E-452, The Oil and Gas Journal, Tulsa, Okla.

CHEMIST

CHEMIST FAMILIAR WITH manufacture and testing of asphalts and road oils; location Oklahoma. State experience, references, salary. Apply to Box 1868, Fort Worth, Texas.

Natural gas executive—Experienced in production, transporting and marketing. Domestic and industrial. Go anywhere. A-1 references. Answer Box E-453, The Oil and Gas Journal, Tulsa, Okla.

COMPTROLLER, AUDITOR, OFFICE MANAGER, 34 years of age, with wide experience including five years public accounting, budgeting, system work, etc., desires permanent connection with reliable oil company. Excellent references. At present employed. Write Box E-458, The Oil and Gas Journal, Tulsa, Okla.

DRILLER: Experienced in rotary or cable tool drilling. Good references. Offer services for part cash, balance in oil or interest. Either wildcat or proven territory. Write Apt. 1, 1774 Gaviota Ave., Long Beach, Calif.

ABSTRACTER-TITLE MAN wants connection with reliable firm. 10 years in Kansas and Oklahoma. 6 years Florida. Expert lease man. References. A. L. Brown, 1620 N.W. Second St., Miami, Florida.

POSITIONS WANTED

RIGHT OF WAY and CLAIM MAN experienced desires position. University graduate. Furnish references. H. J. Conrad, 2547 West 12th Street, Oklahoma City, Okla. Phone 5-9532.

HELP WANTED

DESIRE CONNECTION with producer who would be in a position to furnish 1,500 barrels of high-gravity, Mid-Continent crude per day, also to take financial interest in Canadian Refinery. Answer Box E-424, The Oil and Gas Journal, Tulsa, Okla.

WANTED — Thoroughly experienced and competent chemist for oil refinery. State experience and salary. Give references. Write Box E-454, The Oil and Gas Journal, Tulsa, Okla.

WANTED: Experienced man to handle Oil and Gas Leases and take charge of Lease Exchange, in new field. Must be able to furnish the best of reference. State experience and reference first letter. Box 182, Williamsport, Penna.

Your ad telling of your qualification and the kind of work you desire placed under the Position Wanted Column will produce better and quicker results than waiting for the other fellow to advertise for you.

A special rate of 20 cents a line for the first insertion and 15 cents a line for each additional insertion, applies on Position Wanted ads.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

RANCHES AND FARM LANDS

GAME PRESERVE, fine water, wonderful ranch, oil prospects. Sixty thousand acres, Southwest Texas, for sale. Fee simple.

W. H. Carver,
Uvalde, Texas.

FOR SALE: A Gentlemen's Paradise on top Ozark Mountains. An ideal all-year-'round home. 330 acres, including two miles of White River. Three-quarters in cultivation. Fully equipped, ready to farm and grow cattle. Modern 10-room home with heat, light and baths. Cash or terms. Write owner, P. O. Box 70, Rogers, Arkansas.

CITRUS FRUIT LAND, 30,000 acres, improved as ranch, joining Gov. Sterling's ranch, Dimmitt County. Abundance game, must sell, great bargain, $8.50. Better wire W. H. Carver, Uvalde, Texas.

FOR SALE—MAPS

OIL DEVELOPMENT maps, any county in Oklahoma, 75 cents each; lease block and detail maps. Write for map list. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

SOUTHEAST NEW MEXICO MAPS
Send for list.
THE M. H. HUNTER CO.
Roswell, N. Mex.

EAST TEXAS ownership maps Gregg Co., and NW¼ Rusk, 2,000′ scale, Paper $5.00, linen $7.50 each, base map for geology, scale 12,000′, covers from Palestine north and east to State lines, shows wells with depths. Co. and fee owner names, paper $5.00, linen $7.50. Maps contoured on top of Woodbine sand scale 1″=9 miles covers from Waco north and east to State lines, size 24″x24″, paper $1.50, linen $2.00. Onas Ferguson, 339 Harvey-Snider Bldg., Wichita Falls, Tex.

Of Interest to Sales Departments

January Reports Show Fuel Sales In 12% Increase

An increase of 11.5 per cent in the quantity of gasoline sold is seen in the gasoline tax reports for January, 1931, as compared with the same month in 1930. In the 31-day period in 1931 the number of gallons of gasoline consumed amounted to 824,810,000, while for the corresponding period in the preceding year the amount was 739,587,000 gallons.

These figures give only the quantity of gasoline sold or offered for sale which are reported under the gasoline tax laws of the various states and the District of Columbia. It will also be noted in the following table, compiled by the American Petroleum Institute, that two states are excluded in the figures. New York and Pennsylvania are omitted, the first because figures for comparison in previous years are unavailable, and the second because in Pennsylvania taxes are collected on an unique basis.

GASOLINE CONSUMPTION BY STATES, JANUARY, 1931

	Jan., 1931	Jan., 1930
Arizona	5,850,000	5,935,000
Arkansas	11,752,000	10,921,000
Colorado	12,037,000	9,963,000
Connecticut	13,641,000	12,816,000
Delaware	2,258,000	2,406,000
Dist. of Columbia	6,489,000	5,452,000
Florida	23,221,000	22,012,000
Georgia	17,093,000	17,423,000
Idaho	2,843,000	2,577,000
Illinois	65,609,000	57,714,000
Indiana	31,976,000	29,603,000
Iowa	27,814,000	24,381,000
Kansas	26,815,000	21,722,000
Kentucky	12,396,000	10,048,000
Louisiana	13,847,000	14,124,000
Maine	4,441,000	3,523,000
Maryland	12,337,000	10,809,000
Massachusetts	33,001,000	30,315,000
Michigan	52,644,000	47,036,000
Minnesota	28,269,000	22,131,000
Mississippi	*10,960,000	10,596,000
Missouri	34,011,000	27,734,000
Montana	4,159,000	3,054,000
Nebraska	17,695,000	15,545,000
Nevada	1,070,000	929,000
New Hampshire	2,959,000	2,627,000
New Jersey	36,813,000	32,638,000
New Mexico	3,594,000	3,407,000
North Carolina	26,045,000	21,240,000
North Dakota	6,298,000	3,047,000
Ohio	63,371,000	62,115,000
Oklahoma	23,443,000	20,154,000
Oregon	10,290,000	7,077,000
Rhode Island	5,988,000	5,081,000
South Carolina	8,987,000	8,803,000
South Dakota	8,906,000	7,662,000
Tennessee	15,036,000	14,047,000
Texas	61,059,000	54,225,000
Utah	3,750,000	3,706,000
Vermont	2,124,000	1,793,000
Virginia	15,658,000	14,374,000
Washington	16,431,000	14,336,000
West Virginia	8,028,000	7,125,000
Wisconsin	26,879,000	22,444,000
Wyoming	2,143,000	1,686,000
Total	824,810,000	739,587,000
Daily average	26,607,000	23,858,000
Increase over previous year:		
Amt. of increase	85,223,000	.....
Pct. increase in daily average	11.50%	

*Estimated.

L. R. CRAWFORD HEADS LONG OIL

L. R. Crawford, vice president of Producers & Refiners Corp., Independence, Kans., was elected president of Long Oil Co., to succeed A. W. Long, founder. Prairie Oil & Gas Co. recently obtained controlling interest in this company. Other Prairie employes in the new Long company personnel are A. T. Smith and P. C. Spencer, directors.

H. M. GAY DISTRICT MANAGER

Hubert M. Gay, formerly district supervisor of Gay Oil Co., has been made district manager of Louisiana Oil Refining Corp., recently acquired subsidiary of Cities Service Co.

SOVIETS PLAN INCREASE IN SOUTH AFRICA TRADE

Negotiations to bring about the financing of marketing outlets for Russian gasoline and oil in South Africa by the Soviet Government are reported nearing completion. This is seen as a move on the part of Russia to enter the marketing field in South Africa on a large scale. Hitherfore this country has sold comparatively small quantities of products in the Union through Atlas Petroleum Products, Ltd., to which Naphtha Syndicate of Russia granted a concession.

The Atlas company is said to have been restricted in its operations because of a lack of sufficient financial backing. With the support of the Soviet Government this company, according to officials, will be in a position to compete on equal footing with the American and European companies in the field.

TRACTOR FUEL HELD TAXABLE

The Supreme Court of the United States has rejected the challenge to New Mexico's law which places a 5-cent tax on gasoline which is not utilized on the highways. Constitutionality of this law was upheld by the Supreme Court of New Mexico when lumber companies made a test setting forth that the tax on gasoline used in the logging camps amounted to taking of property without due process of law. The State contended that it was immaterial whether the gasoline was used on the public highways or not.

JUNKING PROGRAM PLANNED

A plan by which automobile dealers are to receive certificates of demolition for each car they scrap and payment on the certificates by the makers of the automobiles, as well as the revenue from junk dealers, is being promoted by the Institute of Scrap Iron and Steel. At present about 500,000 cars are being scrapped each year. The institute expects this number to reach 1,500,000 automobiles annually when the plan begins to operate with the number reaching 3,000,000 vehicles later on.

SOCONY BUYS AUTOGIRO FOR MOTOR FUEL TESTS

Standard Oil Co. of New York has purchased an autogiro, said to be the latest development in aviation from the standpoint of safety and flexibility, to supplement their field research work equipment which includes a fleet of test automobiles. This type of airplane is able to cruise at a low rate of speed and permits of a more lengthy test period for lubricants. The ship is to visit about 400 towns in New York and New England on the first test tour.

TRADE-MARK IS DISALLOWED

NEW YORK, Apr. 4. — Ruling that gasoline and automobile batteries are so closely akin that confusion would ensue were both to carry the same trade-mark, the United States Patent Office has dismissed the application of the Lyons Storage Battery Co. of Belleville, N. Y., for registration of the word "Ethyl" on batteries.

Ethyl Gasoline Corp. opposed the registration, and W. A. Kinnan, assistant commissioner of patents, sustained the objection on the ground that while the products are dissimilar their use is associated with automobiles and confusion would result, and that "Ethyl" has no meaning when applied to batteries.

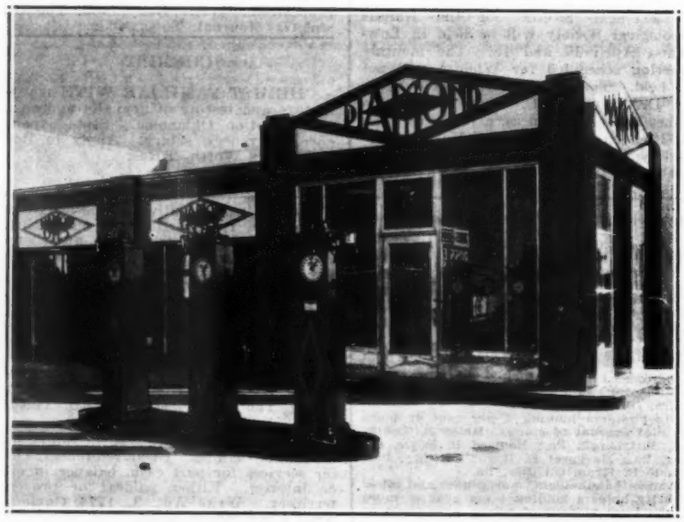
The battery company took the position that the products were entirely dissimilar, and that "Ethyl" is a common word, not descriptive of either, and that Ethyl Gasoline Corp. could not monopolize the word.

RUMANIAN FUEL OIL TO FRENCH

NEW YORK, Apr. 4. — Negotiations for the bunkering of French naval vessels with Rumanian fuel oil have been opened by a French naval commission which recently visited Rumania to survey the petroleum situation.

According to reports from Paris, an agreement is being negotiated whereby the French navy will contract for a "sample" contract for 300,000 tons of Rumanian fuel oil for trial purposes.

MID-CONTINENT ADOPTS ATTRACTIVE DESIGN



The above "all glass" filling station is located in Sapulpa, Okla., and the first to be built by the Mid-Continent Petroleum Corp. using this design. The exterior walls are made entirely of black vitrolite and the window and door frames are made of a highly polished aluminum alloy. The company expects to adopt this design for other stations as they are built.

AVERAGE GALLONAGE NOW 1,280 PER SERVICE UNIT

Oklahoma has 21,800 gasoline filling stations which are expected to sell 335,000,000 gallons of motor fuel during 1931, figures just released by the statistical department of the state auditor's office show. Average monthly gallonage based on these figures would be 1,280.5, and daily sales would be about 43 gallons. With many of the stations selling much more than this quantity it is obvious that a substantial number of the smaller units are operated in conjunction with more profitable enterprises.

N. Y. GASOLINE SALES GAIN

NEW YORK, Apr. 7.—Gasoline consumption in New York State during January, according to tax returns filed at Albany, amounted to 98,946,354 gallons, including tax-paid and exempt motor fuel. The total tax-paid gasoline sales reported to the Motor Fuel Tax Bureau of the Department of Taxation and Finance for January was 96,375,517 gallons, an increase of 6,763,517 gallons, or approximately 7½ per cent, over January, 1930.

Daily average consumption of tax-paid motor fuel in New York State for January this year, according to the bureau's report, was 3,108,888 gallons, as compared with daily average sales of 3,606,692 gallons in the preceding month and 2,890,710 gallons daily in January of last year.

Non-taxable gasoline sales in the State during January included 381,085 gallons sold to the United States Government, 1,953,992 gallons sold to state and municipal governments and 235,760 gallons used by distributors for nontaxable purposes.

URGE TAX ON FUEL OIL

CHATHAM, Ontario, Apr. 6. — Members of the British Columbia provincial legislature have passed a resolution asking the federal government to increase the tariff on imported fuel oil and also to impose a new federal tax on fuel oil which is the residue of crude refined in Canada. The object of the proposed tax is to protect the British Columbia coal mining industry, particularly against cheap fuel oil imported from California.

Some years ago the British Columbia provincial government sought to impose a tax on fuel oil; but when the matter was taken to the courts, it was decided that such a tax was beyond the power of the provincial legislature. Accordingly, the coal interests have latterly been making strong representations to the federal government at Ottawa.

"BARGAIN DAY" LUB OIL

NEW YORK, Apr. 7.—Depression in the lubricating oil division of the petroleum industry has been followed by the marketing of automobile lub oils at "bargain day" prices in New York department stores during the past few months.

The latest department store to feature lubricating oil is Wanamaker's, which this week advertises "A $6 can of 100 per cent Pennsylvania motor oil (20 full quarts) $2.75." According to the store's ad, the oil is high grade Pennsylvania oil from a leading refining company, and it is featured as testing up to all of the specifications of lub oils ordinarily sold at filling stations at 30 cents per quart.

CRAMER BUYS BENOLINE SYSTEM

Two bulk plants and 26 filling stations in the Toledo district have been taken over by Cramer Oil Corp. of Toledo from Benoline Oil Co. The Cramer company was organized recently.

Manufacture of Natural Gasoline

Standard Gasoline Expands Operation In West Coast Area

With two less plants operating than in 1930, Standard Gasoline Co., 100 per cent owned subsidiary of Standard Oil Co. of California, in 1931 shows an increase in the capacity of its natural gasoline plants of 387,425 gallons daily. In 1930 the Standard company's 39 plants had a rated capacity of 508,750 gallons daily. In 1931 the number of operating plants is listed at 37 with their capacities totaling 896,175 gallons daily.

The Standard company's expansion program, however, is not expected to show a proportionate increase in output for the reason that the greater part of the additions is restricted to the Kettleman Hills Field where the unit plan of operation is effecting curtailments in production at present. In fact, the Standard company recently completed a 130,000-gallon daily capacity plant in this field and no date has been set for putting it into operation. Its two other plants in this field have a total daily capacity of 250,000 gallons.

Fields in which Standard Gasoline Co. is operating plants and the number of plants in each are as follows: Santa Fe Springs, four plants; Montebello, one; Murphy Coyote, one; Kraemer and Brea, one each; Huntington Beach, six; Seal Beach, one; Long Beach, three; Dominguez, one; Athens, one; Inglewood, one; Torrance, one; Whittier, Cypress, one each; Ventura, four; Newhall, one; Taft, nine; Wheeler Ridge, one; Kettleman Hills, two. Seven other plants are shut down but available for immediate operation, and 12 more plants, principally in Taft Field, are partly dismantled and their abandonment contemplated.

Of the total number of plants, operating and shut down, 55 are of the absorption type, one is a compression unit, one is a charcoal absorption plant, and four operate as booster stations.

Standard Gasoline Co. is the largest manufacturer of natural gasoline on the West Coast, and the second largest in the country. First place is held by Phillips Petroleum Co., Bartlesville, Okla., which has 46 plants with a total rated daily capacity of 1,329,500 gallons.

COMPLETE CLUBHOUSE

Employes of Standard Gasoline Co., subsidiary of Standard Oil Co. of California now have a well-equipped clubhouse at Kettleman Hills, where they may engage in athletic activities and other diversions with employes of the parent company. A branch county library is also being installed for the Standard men. The Standard Employes Club of Kettleman Hills was organized earlier in the year.

CONTINENTAL PLANT SHUT DOWN

The small natural gasoline plant of Continental Oil Co. at Wichita Falls, Tex., has been shut down. This was a compression unit of 700 gallons daily capacity.

BUILDING TREATING PLANT

Construction work is nearly completed on a treating unit to handle the production of Pure Oil Co.'s natural gasoline plant at Depew, Okla.

PLANT SHUT DOWN

The small natural gasoline plant of the California Co. of Texas, in the Westbrook Field of Mitchell County, has been shut down and is being dismantled. This was the company's only plant.

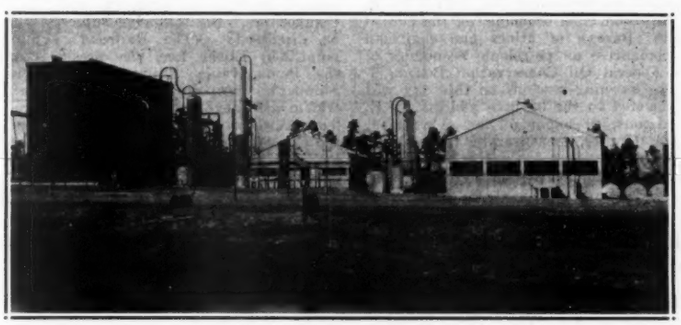
LOUISIANA COMPANIES ADD SECOND HIGH PRESSURE ABSORPTION PLANT

Three companies have started operations at their second jointly owned natural gasoline plant in Louisiana. These companies are Louisiana Gas & Fuel Co., Standard Oil Co. of Louisiana, and Triangle Drilling Co., which have been operating a large high pressure plant near Alto, La. The second plant is at Sugar Creek, near Athens, La.

The new plant is equipped with stabilizing and loading facilities and has a daily capacity of 45,000,000 feet of gas which it handles within a pressure range of 350 to 500 pounds. The gas carries an average of 1 gallon per 1,000 feet and reaches the plant under well pressure.

To reduce the recompressor capacity required to put the fixed gases back into the line the double weathering system is used. Absorber shells are of the hammer-welded type with removable flat heads and contain the conventional "Oil-Froth" assemblies. Open type cooling sections are installed in the deckless cooling tower which is 40 feet high. Steam is supplied from a battery of three water tube boilers. The residue gas goes to a pipe line system. Both plant and pipe line are protected by "Mist-D-Fier" scrubbers.

The plant has storage capacity for 100,000 gallons of gasoline and 25,000 gallons of absorption oil, together with additional storage facilities for 50,000 gallons of gasoline at the loading rack 6 miles away. The plant was designed by J. A. Campbell Co. of Long Beach, Calif., and built by Stearns Roger Manufacturing Co., of Denver, Colo.



One of the high pressure plants.

NATURAL GASOLINE OUTPUT NOW LOWEST SINCE JANUARY, 1929

Natural gasoline production again showed a substantial decline in February when only 152,500,000 gallons were reported to the Bureau of Mines as compared with 173,900,000 gallons for January.

On the basis of daily average output, the decline was from 5,610,000 gallons in January to 5,450,000 gallons in February, the latter representing the lowest figure since January, 1929. Practically all the producing fields reported a lower output of natural gasoline in February, the decline in the Kettleman Hills Field being the most outstanding.

Stocks of natural gasoline held by plant operators on February 28, 1931, continued to increase and amounted to 29,079,000 gallons as compared with 25,470,000 gallons on hand the first of the month.

NATURAL GASOLINE PRODUCTION IN FEBRUARY

(Thousands of gallons)

	Natural gasoline					Blended motor fuel Feb., 1931		
	Production			Stocks end of month		Naphtha		
	Feb., 1931	Jan., 1931	Feb., 1930	Feb., 1931	Jan., 1931	Natural gasoline used	Other oils used	Stocks end of month
Appalachian	7,600	8,900	9,200	4,761	4,197	70	84	222
Illinois, Kentucky, etc.	1,000	1,100	1,300	546	327	...	...	...
Oklahoma	38,900	43,100	47,300	10,476	9,401	128	134	132
Oklahoma City	3,300	3,500	1,600	2,001	2,121	..	...	...
Osage County	5,400	7,400	5,900	2,129	1,650	8	2	2
Seminole, etc.	15,300	16,300	21,800	2,685	2,485	19	22	36
Rest of State	14,900	15,900	18,000	3,661	3,145	101	110	94
Kansas	2,600	2,700	2,800	1,617	1,052	12	1	9
Texas	36,700	40,800	36,700	7,380	6,357	108	188	88
Panhandle	17,500	19,700	18,200	3,122	2,346	33	27	18
North Texas	3,500	3,900	3,600	776	943	4	4	11
West Central	10,600	11,900	11,800	2,690	2,444	76	153	55
Rest of State	5,100	5,300	3,100	792	624	5	4	4
Louisiana	4,700	4,800	6,000	866	1,113	30	18	31
Arkansas	2,400	2,600	2,400	293	206	192	167	33
Rocky Mountains	4,800	5,700	3,800	745	608	...	...	...
California	53,800	64,200	68,900	2,395	2,209	...	...	...
Huntington Beach	1,700	2,000	3,200	....	....	...	...	...
Kettleman Hills	11,800	16,300	8,300	....	....	...	...	...
Long Beach	12,300	13,700	14,400	....	....	...	...	...
Santa Fe Springs	9,900	12,100	20,800	....	....	...	...	...
Ventura Avenue	4,400	4,800	5,700	....	....	...	...	...
Rest of State	13,700	15,300	16,500	....	....	...	...	...
Total	152,500	173,900	178,400	29,079	25,470	540	592	515
Daily average	5,450	5,610	6,370	....	....	19	21	...
Total (thousands of bbls.)	3,631	4,140	4,247	692	606	13	14	12
Daily average	130	134	152	....	....	...	...	...

SECOND TEST SERIES ON VAPOR LOCKING PLANNED

A series of tests on automobiles in which the manufacturers have changed the design of the motor fuel systems to avoid vapor lock will be undertaken this summer by the Bureau of Standards, according to H. K. Cummings, chief of the automotive power plant section. These tests are expected to demonstrate the degree of success attained by the automobile manufacturers in making the changes indictated as necessary in the first series of tests conducted by the bureau last year. Faulty performance of automobile engines was then seen to be caused by overheated fuel lines.

"Earlier studies," Mr. Cummings said, "have shown the temperatures at which the various highly volatile gasolines 'boil,' and it is necessary now only to know what temperatures are actually reached at the fuel pump or vacuum tank and in the fuel lines of typical motor cars.

"A number of companies manufacturing automobiles and buses, and also several companies producing gasoline co-operated last year in tests which supplied much basic information. The same co-operative system is to be employed this summer. The course over which the test runs will be made has not yet been selected but it is probable that if a course similar to that in West Virginia, where the first tests were made, can be found nearer Washington it will be used.

"The problem," Mr. Cummings continued, "developed from efforts to achieve ease of starting and quick 'pick-up' by use of highly volatile gasoline. Probability of trouble with boiling in the feed lines is increased, however, when such gasolines are used. If systems for feeding gasoline to the engines can be devised to prevent inordinate rises in fuel temperature, advantages of highly volatile gasolines can be gained without danger of ineconomies or balkiness in engine operation.

"During recent years it has been the custom of many large oil companies to sell seasonal grades of gasoline, providing products for use in cold weather having higher volatility than those distributed during summer months. It has been found, however, that unseasonal weather has often brought an 'epidemic' of vapor lock because gasoline sufficiently volatile to make starting easy in cold weather began to boil when higher temperatures prevailed. It is believed that information to be gained for the tests this summer will lead to refinements in design of systems for feeding fuel to engines and that these refinements will eliminate much of the trouble."

PLANS FOR NEW PLANT

BORGER, Tex., Apr. 4.—The Continental Construction Co. has tentative plans for the erection of a gasoline plant near Fritch, the origin point for the company's gas line to Chicago. The compressor station at this location will house 12 units of 1,250 horsepower each and the gasoline plant will be used to recover the gasoline that is liquified by the compression plant.

COMPLETING KETTLEMAN LINE

Construction work will be finished by the close of this month on the Associated Oil Co.'s pipe line from Belridge and Kettleman Hills Fields. The line will carry natural gasoline to Monterey, Calif., where some of the consignments will be taken to San Francisco Bay by tanker and blended for sale at the company's Avon refinery. A $2,000,000 cracking equipment installation will be in operation at this refinery by June 1.

Brief Items for Petroleum Refiners

FRENCH BUILDING PLANS AWAIT SENATE DECISION

NEW YORK, Apr. 4.—Considerable important refinery construction in France has been held back pending final action on the Compagnie Francaise des Petroles oil measure. The French Government is here given absolute right to 80 per cent of the company's production, and provision is also made to assure 25 per cent of domestic consumption of petroleum products to Compagnie Francasie du Raffinage, subsidiary of the crude oil producing company. The French Senate is to pass upon the measure and if this is done in substantially the same form as by the Chamber of Deputies an early start of refinery construction is looked for.

Standard Oil Co. of New Jersey, Gulf Oil Corp., and Atlantic Refining Co. are prominent among the American companies which will have an important place in the French refining industry, and quantities of crude oil from the United States and South America will be required for refining in France pending the development of adequate crude supplies in Iraq, where the French Government, along with British, American and Dutch companies, holds an interest in the Iraq Petroleum Co.'s extensive concessions.

HUASTECA PLANT EXPANSION

Huasteca Petroleum Co., according to dispatches from Mexico City, has announced plans to spend close to $2,000,000 in enlarging its refinery at Tampico to bring the plant's production up to enable the company to stop its importation of gasoline from Venezuela. Huasteca officials are quoted by Mexican newspapers as saying that they do not contemplate further importations from Venezuela. This action followed a series of attacks by "El Universal" and "Excelsior," leading Mexican newspapers, on such importation.

In December Huasteca imported 12,750,091 liters of gasoline, and in February, 12,876,940 liters. Duties in each case amounted to more than $200,000.

FUEL OIL IN POWER PLANTS

In February of this year electric public utility power plants in the United States used 644,112 bbls. of fuel oil. During this month these plants also used 3,265,366 tons of coal and 9,146,267 feet of natural gas. In January the quantity of fuel oil used was 794,944 bbls., as compared with 3,685,028 tons of coal and 10,075,809 feet of natural gas.

STARR COUNTY LINE

RIO GRANDE, Tex., Mar. 28.—A survey has been made of the gas field in Starr County by interests which propose to lay a pipe line connecting the field with cities of the lower valley. One gas well, with an estimated flow of 30,000,000 feet, has been brought in and other wells are being drilled.

ENLARGE LOADING FACILITIES

The Southern Oil & Refining Co. is doubling its loading rack in Kilgore, Tex., the East Texas oil field to a capacity of 120 cars. Crude is being shipped from the Joiner Field to the Canadian and Gulf Coast markets.

BURFORD PLANT OPERATING

First shipment of gasoline from the recently completed skimming plant of East Texas Refining Co. was made last week when five car loads were shipped to points in Missouri and Michigan. The plant has a daily crude capacity of 6,000 bbls. and is now running 3,000 bbls. daily.

COMPLETE CLEVELAND PROGRAM FOR NATIONAL PETROLEUM ASSOCIATION

Program for the semiannual meeting of the National Petroleum Association, to be held at Cleveland, April 23 and 24, has been announced and features, with ample time provided for discussion, those subjects which are of vital interest to the industry at this time. The meeting is open to all who are engaged in the oil business in any of its branches and to interested persons outside the industry.

Papers relating to the industry's most serious problems will be read in the afternoon sessions of the first day. These are "The Oil Industry's Immediate Economic Problems," by H. J. Struth, petroleum economist; "The Present and Future of Petroleum Marketing," by L. V. Nicholas, and "An Analysis of Crude Oil and Gasoline Supply and Demand for the Period April 1 to September 30, 1931," by E. B. Swanson, chief economist of the United States Bureau of Mines and chairman of committee on petroleum economics of the Federal Oil Conservation Board.

The morning sessions on this day will be devoted to the keynote address by E. M. Lyons, president of the association. G. B. Hunter, treasurer of the association, will present his report. A paper on "The Automotive and Petroleum Industries," will be presented by H. L. Horning, president of Waukesha Motor Co. The Fellowship Supper, which is one of the most interesting features of the association's meetings, will be held at the Midday Club on the night of April 23, at 7 o'clock, with Fred G. Clark in charge of the entertainment.

Papers to be presented on the second day are, for the morning sessions: "Recent Developments in Petroleum Refining," by D. G. Brandt, of Henry L. Doherty & Co.; "The Antiknock Rating of Gasoline," by Earl Bartholomew, director of engineering laboratory of Ethyl Gasoline Corp., and "Government Purchase of Petroleum Products on Specifications," by H. C. Dickinson, chief of the heat and power division of the United States Bureau of Standards.

In the afternoon sessions, under the general heading of "Railroads and Their Competitors," the following subjects will be discussed: "The Railroad's Viewpoint," by Elisha Lee, vice president of the Pennsylvania Railroad Co.; "The Shipper's Viewpoint," by Willis Crane, traffic attorney for the National Petroleum Association, and "Who Pays for the Construction and Maintenance of the Public Highways?" by John E. Walker, tax specialist.

NEW WHITE STAR UNITS IN OPERATION BY MAY 1

Installation of stabilizer and debutanizing units at the White Star Refining Co.'s plant at Detroit, Mich., is nearing completion and the new equipment is expected to be in operation by May 1.

The debutanizing unit is designed to vaporize and take overhead 30 per cent of 130,000 gallons of raw pressure distillate per day, and has a peak load capacity of 165,000 gallons daily. The gasoline stabilizer is capable of processing 40,000 gallons per day and has a peak load capacity of 50,000 gallons. The installations were designed and constructed by Foster Wheeler Corp.

STANDARD OF INDIANA Q.D.A.

Effective April 1 the Standard Oil Co. (Indiana) posted a new quantity discount on purchases of gasoline of 1,000 gallons or more. The new schedule provides for a discount of 3 cents per gallon within the Chicago area and 2 cents per gallon in the balance of the company's marketing territory. The discounts will be allowed each month and are not accumulative.

BUILDING NORTH TEXAS PLANT

W. C. Young, of Archer, Tex., is constructing a 250-bbl. daily capacity skimming plant 1 mile south of that city. The installation consists of a pipe still and a 60-foot bubble tower. Crude oil for the plant is brought by truck.

START NEW MEXICO PLANT

ARTESIA, N. Mex., Apr. 3.—The Pecos Diamond Refining Co. expects to start operating its small skimming plant within the next week. The refinery is located 10 miles southeast of this city.

CASPER PLANT REOPENED

The Texas Company has reopened its 10,000-bbl. refinery at Casper, Wyo., which has been shut down for several weeks for repairs to stills and installation of new equipment.

PURE OIL CO. TO SUPPLY GAS TO LOCAL INDUSTRY

TOLEDO, Ohio, Apr. 6.—The Pure Oil Co. is laying two gas lines from its new refinery here to the Libby-Owens Ford Co. plant in Rossford, a distance of about 10½ miles. The system will provide the Libby-Owens-Ford Co. through a 6-inch line an auxillary 4-inch line being laid as an emergency measure. Approximately 500,000 feet of gas will be supplied by the Pure Oil Co. daily and represents the production of the refinery. Most of this gas will come from the three Gyro units placed in operation a little over a month ago.

The practice of selling refinery gases to local manufacturers and to distributing companies for general use has become popular within the past two years and not only affords a profitable outlet for the excess gas production but supplies a gas of exceptionally high heating value to the consumer.

In addition to these lines, the Pure Oil Co. is installing pumping machinery, gas holders and other equipment necessary for the handling and transportation of their product.

CITIES LEVY GASOLINE TAX

Gasoline taxes are being collected by more than 100 municipalities in the United States. This is in addition to the state levy. In some of these cities a high municipal tax has been lowered because motorists began patronizing stations outside the city limits and the urban operators were facing bankruptcy. The taxes are levied on the theory that operation of motor vehicles increases the expense of street maintenance and traffic control.

NEBRASKA REFINERY PROJECTED

Osage Oil Trust Co., which holds wells and leases in the Osage Field, eastern Wyoming, capable of producing 1,000 bbls. daily, is considering plans for the construction of a small skimming plant in western Nebraska, probably at Crawford.

LOWER FREIGHT RATES ON EAST TEXAS CRUDE

AUSTIN, Tex., Apr. 3.—Lower freight rates on East Texas crude oil moving to the Gulf Coast and North Texas points were authorized by the Texas Railroad Commission March 30, as follows: From St. Louis southwestern stations, Tyler to Winona, inclusive, to Houston, Galveston, Texas City, Baytown, Beaumont, Orange, Port Arthur, Sabine, Sabine Pass and stations on the Texarkana & Fort Smith Railway south of Beaumont, 11 cents per 100 pounds; from Tyler and Amigo to Dallas and Fort Worth 11 cents; from Winona to Chandler, inclusive, to Angus and Minerva, 13 cents per 100 pounds; from Longview Junction to Beaumont, 11 cents per 100 pounds, on application of Gulf, Colorado & Santa Fe.

COLONIAL BEACON SELLING ESSO

NEW YORK, Apr. 6.—Action of Colonial Beacon Oil Co., subsidiary of Standard Oil Co. of New Jersey, in installing "Esso" pumps in place of its own premium fuels at all its stations, places the New Jersey company in competition with Standard Oil Co. of New York and other traditional holders of New York and New England territory. This step marks a further breaking down of the former rigid territorial lines which characterized the marketing operations of the old Standard Oil companies until a few years ago.

FORM TRAFFIC ASSOCIATION

FORT WORTH, Tex., Apr. 7.—Traffic men representing refiners, natural gasoline manufacturers and shippers of crude petroleum met here yesterday as a result of an invitation sent to companies in the Mid-Continent area by the Anderson-Prichard Oil Corp. to discuss means of combating competition being set up by gasoline pipe lines and the railroads which lowered rates along these pipe lines. The meeting was presided over by M. H. Champion of the Anderson-Prichard Oil Corp. and I. B. Simmons of Duncan, Okla., was elected chairman of a permanent organization formed, to be known as the Mid-Continent Rail Shippers Association.

REFINERY IN OPERATION

HOUSTON, Tex., Apr. 6.—The first unit of the new refinery being built by the American Petroleum Co. at Northsworthy, on the Houston Ship Channel, has been completed and was put in operation the past week. The unit has a capacity of around 1,500 bbls. daily. The plant is to be operated partly on East Texas crude which is being brought by tank car into the company's tank farm adjoining the refinery.

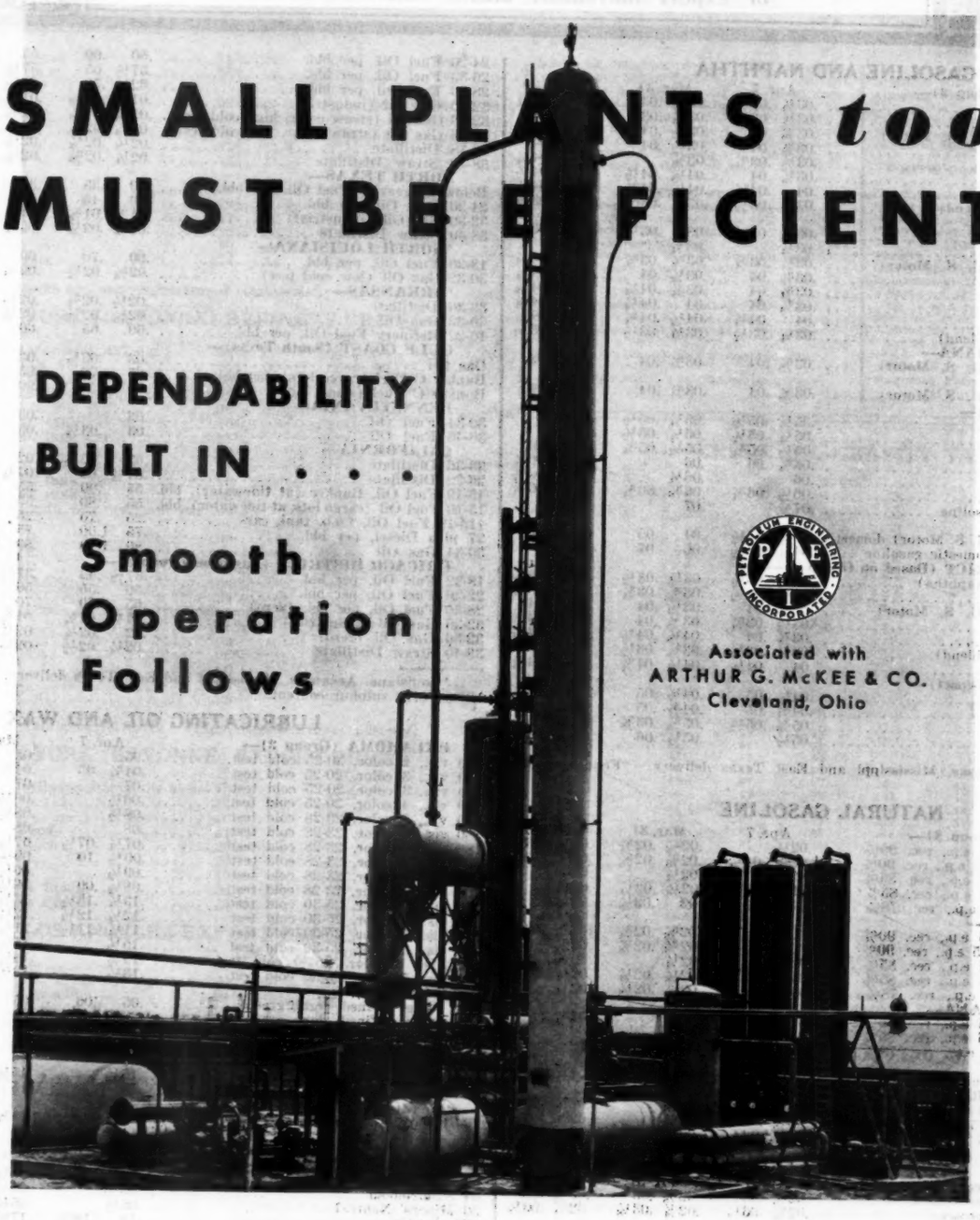
ORGANIZE NEW COMPANY

Formation of a new company to be known as Standard Oil & Refining Co. of Delaware is in process by John McCullough, of Oklahoma City, who with his associates recently purchased the properties of Crump Refining Co. in the Oklahoma City Field. The plant has a daily capacity of 2,000 bbls. and has run only intermittently because of difficulties in obtaining crude.

TO BUILD GREGG COUNTY PLANT

A site, 500'x600' in size, has been purchased by the Korei interests of Wichita Falls, Tex., at Gladewater, Tex., as the location of a small skimming plant which is to be completed by May 1. Capacity of the plant will be 4,000 bbls. daily.

SMALL PLANTS *too* MUST BE EFFICIENT



DEPENDABILITY BUILT IN . . .

Smooth Operation Follows

Associated with
ARTHUR G. McKEE & CO.
Cleveland, Ohio

PETROLEUM ENGINEERING, INC.

PHILTOWER BUILDING
TULSA

ATHLETIC CLUB BUILDING
DALLAS

REPRESENTED THROUGHOUT THE WORLD BY
THE NATIONAL SUPPLY COMPANIES

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Apr. 7		Mar. 31		Mar. 24	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.03¼	.03½	.03½	.03¾	.03½	.03¾
56-58 450 endpoint	.03¼	.03½	.03⅝	.03¾	.03⅝	.03¾
58-60 437 endpoint (U. S. Motor)	.03⅜	.04	.03½	.04	.03½	.04
60-62 437 endpoint	.03⅜	.04	.03½	.04	.03½	.04
60-62 400 endpoint	.03½	.03¾	.03⅝		.03¾	.04½
64-66 375 endpoint	.03⅞	.04	.04½	.04½	.04¼	.04½
68-70 360 endpoint	.04	.04½	.04½	.04¾	.04½	.04¾
64-66 437 endpoint (blend)	.03¼	.03½	.03¼	.03¾	.03¼	.03¾
NORTH TEXAS—						
50-52 450 endpoint	.03¼	.03½	.03¼	.03½	.03¼	.03½
58-60 450 endpoint	.03¼		.03¼		.03¼	
58-60 437 endpoint (U. S. Motor)	.03¼	.03¾	.03⅝	.03¾	.03⅝	.03¾
60-62 400 endpoint	.03⅝	.04	.03½	.04	.03⅝	.04½
64-66 390 endpoint	.03¾	.04	.03¾	.04½	.03¾	.04½
64-66 375 endpoint	.03⅞	.04	.04	.04½	.04½	.04½
68-70 360 endpoint	.04	.04½	.04½	.04¾	.04½	.04¾
64-66 437 endpoint (blend)	.03¼	.03½	.03¼	.03½	.03¼	.03½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.03⅝	.04	.03¾	.04	.03¾	.04
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.03⅝	.04	.03¾	.04	.03¾	.04
PENNSYLVANIA—						
52-54 Naphtha	.05¼	.05½	.05¼	.05½	.05½	
54-56 Naphtha	.05¼	.05½	.05¼	.05½	.05¾	
58-60 Gasoline	.05½	.05¾	.05½	.05¾	.05¾	.06
60 Gasoline	.05¾	.06	.06		.06	.06¼
62 Gasoline	.06		.06¼		.06	.06½
64 Gasoline	.06½	.06¾	.06⅝	.06¾	.06¼	.06¾
68-70 350 endpoint gasoline	.07		.07		.07	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.03½	.04½	.04	.05	.05	.06
†58-62 400 endpoint domestic gasoline	.04¾	.05½	.06	.07	.07	.09
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.03¼	.03½	.03¼	.03½	.03¼	.03½
56-58 450 endpoint	.03¼	.03½	.03⅝	.03¾	.03⅝	.03¾
58-60 437 endpoint (U. S. Motor)	.03¾	.04	.03½	.04	.03½	.04
60-62 400 endpoint	.03½	.03¾	.03⅝	.04	.03⅝	.04
64-66 375 endpoint	.03⅞	.04	.04½	.04½	.04¼	.04¾
64-66 437 endpoint (blend)	.03¼	.03½	.03¼	.03½	.03½	.04
68-70 360 endpoint	.04	.04½	.04½	.04¾	.04½	.04¾
GULF COAST (Export)—						
58-60 U. S. Motor	.04½	.05	.04½	.05	.04½	.05
60-62 400 endpoint	.04¾	.05	.04¾	.05	.04¾	.05
61-63 390 endpoint	.05⅜	.05½	.05⅜	.05⅝	.05⅜	.05⅝
64-66 375 endpoint	.05½		.05½	.06	.05½	.06

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	Apr. 7		Mar. 31		Mar. 24	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02¼		.02⅝	.02¾	.02⅞	.03
Grade AA, 80-87.9, 375 e.p., rec. 90%	.02⅛	.02¼	.02⅝	.02⅝	.02⅝	
Grade B, 76-83.9, 375 e.p., rec. 85%	.02		.02¼		.02⅜	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅞	.02	.02⅛	.02¼	.02¼	
Grade C, 80-92, 375 e.p., rec. 78%	.01¾	.02	.02	.02⅛	.02¼	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02¼		.02⅝	.02¾	.02⅞	.03
Grade AA, 80-87.9, 375 e.p., rec. 90%	.02⅛	.02¼	.02⅝	.02⅝	.02⅝	
Grade B, 76-83.9, 375 e.p., rec. 85%	.02		.02¼		.02⅜	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅞	.02	.02⅛	.02¼	.02¼	
Grade C, 80-92, 375 e.p., rec. 78%	.01⅞	.02	.02	.02⅛	.02¼	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.02¼		.02⅝		.02⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.02⅛		.02¼		.02⅝	
Grade C, 80-92, 375 e.p., rec. 78%	.02		.02⅛		.02½	
CALIFORNIA—						
75-78 375-390 endpoint	.03½	.04¼	.04½	.05½	.04½	.05½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02¼		.02⅝		.02⅞	.03
Grade AA, 80-87.9, 375 e.p., rec. 90%	.02⅛	.02¼	.02⅝		.02⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅞	.02	.02⅛		.02⅝	

BURNING OIL

	Apr. 7		Mar. 31		Mar. 24	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.02⅝	.03	.02⅝	.03	.02⅝	.03
42-44 water white kerosene	.02¾	.03⅛	.02¾	.03⅛	.02¾	.03⅛
NORTH TEXAS—						
41-43 water white kerosene	.02½	.03	.02½	.03	.02½	.03
40-41 water white kerosene	.02⅜	.02½	.02⅜	.02¾	.02⅜	.02¾
***NORTH LOUISIANA—**						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
***ARKANSAS—**						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
PENNSYLVANIA—						
43 Kerosene prime white	.04½		.04½		.04½	
45 Kerosene water white	.04½	.04⅝	.04⅝	.04¾	.04⅝	.04¾
46 Kerosene water white	.04¾	.05	.04¾	.05¼	.04¾	.05¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04¼	.04¾	.04½	.05½	.04¾	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02⅝	.02¾	.02⅝	.02¾	.02⅝	.02¾
42-44 water white kerosene	.02¾	.03	.02¾	.03	.02¾	.03
GULF COAST (Export)—						
41-43 prime white	.04½		.04½		.04¼	
44 water white	.05¼		.05¼		.05¼	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Apr. 7		Mar. 31		Mar. 24	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.35	.40	.37½	.45	.40	.45
18-22 Fuel Oil, per bbl.	.37½	.42½	.40	.45	.42½	.50
20-22 Fuel Oil, per bbl.	.40	.45	.42½	.47½	.45	.55
22-26 Fuel Oil, per bbl.	.45	.55	.50	.60	.50	.60
24-26 Fuel Oil, per bbl.	.50	.60	.55	.60	.57½	.62½
26-30 Fuel Oil, per bbl.	.57½	.65	.57½	.67½	.62½	.67½
28-30 Fuel Oil, per bbl.	.62½	.70	.62½	.70	.67½	.75
32-36 Gas Oil (industrial)	.01½	.01⅝	.01½	.01⅝	.01⅝	.01¾
32-36 Gas Oil (straw color, high cold test)	.01⅝	.01⅞	.01⅝	.01⅞	.01¾	.02
32-36 Gas Oil (straw color, low cold test)	.01⅞	.02⅛	.02	.02⅛	.02⅛	.02⅜
36-38 Distillate	.02⅛	.02¼	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.02¼	.02⅜	.02⅜	.02⅞	.02⅜	.02⅞
NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.30	.35	.30	.35	.30	.35
24-26 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
32-36 Gas Oil (industrial)	.01⅜	.01⅝	.01½	.01¾	.01½	.01¾
38-40 Straw Distillate	.02⅛	.02¼	.02¼	.02½	.02¼	.02½
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.60	.70	.60	.70	.60	.70
30-32 Gas Oil (low cold test)	.02⅜	.02½	.02⅜	.02½	.02⅜	.02½
***ARKANSAS—**						
33-36 Distillate	.02½	.02¾	.02½	.02¾	.02½	.02¾
30-32 Gas Oil	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
16-22 Refinery Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
GULF COAST (South Texas)—						
Gas Oil	.03	.03⅛	.03	.03⅛	.03	.03⅛
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	.90		.90		.90	
PENNSYLVANIA—						
30-34 Fuel Oil	.03		.03		.03	.03¼
36-40 Fuel Oil	.03	.03¼	.03	.03⅛	.03⅛	.03¼
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.55	.90	.55	.90	.55	.90
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.80	.55	.80	.55	.80
†15-19 Fuel Oil, f.o.b. tank cars	.25	.70	.25	.70	.25	.70
27 plus Diesel, per bbl.	.75	1.00	.75	1.00	.75	1.00
30-34 Gas Oil	.80	1.10	.80	1.10	.80	1.10
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.37½	.45	.37½	.45	.37½	.45
22-26 Fuel Oil, per bbl.	.50	.55	.50	.55	.50	.55
28-30 Fuel Oil, per bbl. (zero)	.65	.70	.70	.75	.70	.75
32-36 Gas Oil (industrial)	.01½	.01¾	.01⅝	.01⅞	.01¾	.01⅞
32-36 Gas Oil (zero)	.02	.02¼	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.02¼	.02½	.02½	.02¾	.02½	.02¾

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

	Apr. 7		Mar. 31		Mar. 24	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.05		.05		.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.05	.06	.05	.07	.06	.07
600, steam refined, dark green	.03½	.04½	.04	.05	.04	.05
190-200 vis., D color, Bright Stocks	.20		.20		.25	
150-160 vis., D color, Bright Stocks 0-10 c.t.	.17		.17		.17	.18
150-160 vis., D color, Bright Stocks 10-25 c.t.	.16		.16		.16	.17
150-160 vis., D color, Bright Stocks 25-40 c.t.	.15½		.15½		.15½	.16½
150-160 vis., E color, Bright Stocks	.15		.15		.15	.16
Waxes:						
124-126 White Crude Scale Wax	.01¾	.02	.01¾	.02	.01¾	.02

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06	.05½	.06	.05½	
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.18	.18½	.17½	.18	.17½	.18
180, 3 color	.19	.20	.19	.19½	.19	.19½
200, 3 color	.22½		.22	.22½	.22	.22½
220, 3 color	.25	.27	.24	.27	.24	.27
600, steam refined	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
650, steam refined	.12	.12½	.12	.12½	.12	.12½
600, Pennsylvania Flash	.12	.14	.11	.14	.11	.14
630, Pennsylvania Flash	.18		.18		.18	
600, E filtered	.12	.13	.12	.13	.12	.13
600, D filtered, Oil City	.16½	.17	.15	.16	.16	.17
Pennsylvania Bright Stocks below 35 c.t.	.18½	.19	.18½	.19	.18½	.19
Pennsylvania Bright Stocks above 35 c.t.	.18	.19	.18		.18	
*122-124 White Crude Scale Wax	.02¼		.02¼	.02⅜	.02¼	.02⅜
124-126 White Crude Scale Wax	.02¼		.02¼	.02⅜	.02¼	.02⅜

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06	.06¼	.06	.06¼	.06	.06¼
200 vis., 3 color, pale oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
300 vis., 3 color, pale oil	.09½	.09¾	.09½	.09¾	.09½	.09¾
500 vis., 3½ color, pale oil	.10¾	.11	.10¾	.11	.10¾	.11
750 vis., 3½ color, pale oil	.12¼	.12½	.12¼	.12½	.12¼	.12½
1,200 vis., 3½ color, pale oil	.14¾	.15	.14¾	.15	.14¾	.15
2,000 vis., 4 color, pale oil	.15¾	.16	.15¾	.16	.15¾	.16
200 vis., 5-6 color, red oil	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
500 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼
750 vis., 5-6 color, red oil	.11	.11¾	.11	.11¾	.11	.11¾

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

1,200 vis., 5-6 color, red oil	.13¾	.14	.13¾	.14	.13¾	.14
2,000 vis., 6 plus color	.15¾	.16	.15¾	.16	.15¾	.16
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.09½	.10	.09½	.10	.09½	.10
300 vis., 5-6 color	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
400 vis., 5-6 color	.11	.12	.11	.12	.11	.12
500 vis., 4½-5 color	.12¼	.13	.12¼	.13	.12¼	.13
500 vis., 5-6½ color	.12	.12¾	.12	.12¾	.12	.12¾
600 vis., 6½ plus color	.13	.14	.13	.14	.13	.14

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Apr. 7		Mar. 31		Mar. 24	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06½	.08	.06½	.08	.07	.08
Kerosene, water white, 41-43	.05¾	.06	.05¾	.06	.06	
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	1.75		1.85		1.85	
Gas Oil, 28 gravity plus	.04¼	.05¼	.04¼	.05¼	.04¼	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10½	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03	
125-127 a.m.p., per lb.	.03¼		.03¼		.03¼	
130-132 a.m.p., per lb.	.03⅝		.03⅝		.03⅝	
133-135 a.m.p., per lb.	.04⅛		.04⅛		.04⅛	
135-137 a.m.p., per lb.	.04¼		.04¼		.04¼	
Petrolatum in barrels in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03		.03		.03	
Extra Amber	.03¼		.03¼		.03¼	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Apr. 7	Mar. 31	Mar. 24
600, steam refined cylinder stocks, in bbls.	.16¼	.16¼	.16½
635, steam refined	.17	.17	.17
650, steam refined	.20	.20	.20
900, Pennsylvania Flash	.21	.21	.21
630, Pennsylvania Flash	.26	.26	.27
600, Warren E	.20	.20	.21
600, Oil City E	.19	.19	.20
Light 140-150 Bright Stocks	.26	.26	.25½ .26
Dark 140-150 Bright Stocks	.24	.24	.23½ .24

LOS ANGELES EXPORT PRICES

	Apr. 7		Mar. 31		Mar. 24	
Kerosene, water white	.04½	.05¼	.04¾	.06	.04¾	.06
*U. S. Motor Gasoline, 53-55, 437 e.p.	.04	.05	.04¾	.06¾	.04¾	.06¾
*58-62, 400 endpoint gasoline	.04½	.05½	.05¾	.07½	.05¾	.07½

*For coastwise shipment.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Rusk County, Tex.* (Feb. 10, 1931).....$ .40
Corsicana heavy ‡(Mar. 10, 1931)†..... .45
Other fields.....See gravity table

*Posted by Panola Pipe Line Co. For Magnolia Petroleum Co. posted prices on East Texas, see gravity table. †Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties..See gravity table

WEST TEXAS

Iatan*.....Same as North Texas
Crane - Upton - Crockett, Howard and Glasscock and Ector (Mar. 10, 1931)†.$ .35
Winkler and Pecos, Tex., and Lea County, N. Mex. (Mar. 10, 1931)†..... .40

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Mar. 10, 1931).$ .45
Carterville, Sarepta and Cotton Valley, below 36 gravity.....See gravity table
March 10, 1931 ..... .45
Urania (Oct. 30, 1930)..... .75
Calion, heavy (Mar. 10, 1931)..... .45
East El Dorado (Mar. 10, 1931)..... .45
Other fields.....See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co.; Calion posted by Gulf Refining Co.

GULF COAST

Grade A (Jan. 14)*.....$ .30
Grade B, 25° and upward—See gravity table
Jennings, La. (Oct. 30, 1930)†..... .80
Refugio (light).....Same as Grade B
Refugio (heavy) (Jan. 14)*..... .69
Markham (Mar. 10, 1931)‡..... .50
High Island (Oct. 30, 1930)†..... .75

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles (Feb. 15, 1930):
33 gravity and above.....$ .87
Under 33 gravity..... .65
Dutton Creek (Oct. 28, 1930)..... 1.01
Rock Creek, Wyo. (Mar. 5, 1931)..... .66
Salt Creek.....See gravity table
Big Muddy (Mar. 5, 1931)..... .65
Grass Creek, heavy (July 27, 1928)..... .90
Grass Creek, light (Mar. 5, 1931)..... .90
Mule Creek (May 21, 1929)..... 1.20
Elk Basin (Mar. 5, 1931)..... .90
Lance Creek (Mar. 5, 1931)..... .98
Poison Spider (Mar. 14, 1927)..... 1.00
Notches (Mar. 14, 1927)..... .65
Dallas-Derby (Jan. 1, 1931)..... .70
Hudson (Jan. 1, 1931)..... .75
Rex Lake (Feb. 22, 1930)..... 1.10
Osage (Nov. 1, 1930)..... .85
Lost Soldier (Mar. 6, 1931)..... .65
Hamilton Dome (Mar. 14, 1927)..... .85
Greybull (Oct. 28, 1930)..... 1.25
Torchlight (Oct. 28, 1930)..... 1.25
Cat Creek (Oct. 28, 1930)..... 1.25
Pondera. (Mont.) (Oct. 28, 1930)..... 1.45
Sunburst (Mont.) (Oct. 28, 1930)..... 1.55
Hogback (N. Mex.) (Oct. 28, 1930)..... 1.40
Artesia (N. Mex.) (Mar. 10, 1931)..... .40
Lea County ..... .40
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Osage, Cat Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin, Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Ohio Oil Co. ceased posting Artesia on March 5, 1931.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective Nov. 12, 1930)

Penna Grade Oil in National Transit Lines (Pennsylvania) $1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania) 1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)..... 1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)..... 1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Line (Mar. 11, 1931)..... .80
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) 1.10
Wayne District Oil in Cumberland Pipe Lines 1.17

Tide Water Pipe Co.

Bradford district (Nov. 12, 1930).....$2.15
Allegany district (Nov. 12, 1930)..... 2.15

Pure Oil Co.

Cabin Creek, W. Va. (Nov. 12, 1930)...$1.70
Kelly Creek, W. Va. (Nov. 12, 1930)... 1.70
Bradford Hollow, W. Va. (Nov. 12, 1930) 1.70

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Mar. 10, 1931)*.....$ .60
Luling (Mar. 10, 1931)†..... .45
Mirando (Jan. 14)*..... .69
Pettus (Mar. 10, 1931)*..... .95
Salt Flat (Mar. 10, 1931)*..... .60
Thrall‡ .....
Lytton Springs (Lockhart).See gravity table
Dobrowolski (Oct. 25, 1930)‡.....
Same as Mid-Continent gravity scale up to and including 38-38.9° at..... 1.01
Somerset (Oct. 25, 1929)‡.....
Same as Mid-Continent gravity scale up to and including 38-38.9° at..... 1.01

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petro-

(Continued on Page 122)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Kansas, Oklahoma, North Central, East Central Texas	2 East Texas	3 North Louisiana-Arkansas	4 Carson and Hutchinson (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Salt Creek, Wyoming	7 Stephens, Arkansas	8 Grade B, Gulf Coast
Below 25	....	$.40	....	....	....	....	....	$.69
25 to 25.9	....	.40	....	....	....	....	....	.71
26 to 26.9	....	.41	....	....	....	....	....	.73
27 to 27.9	....	.42	....	....	....	....	....	.75
28 to 28.9	....	.42	....	....	....	....	....	.77
Below 29	$.43	....	$.43	....	....	....	$.54	....
29 to 29.9	.45	.45	.45	....	....	$.45	.58	.79
30 to 30.9	.47	.47	.47	....	....	.47	.62	.81
31 to 31.9	.49	.49	.49	....	....	.49	.66	.83
32 to 32.9	.51	.51	.51	....	....	.51	.70	.85
33 to 33.9	.53	.53	.53	....	....	.53	....	.87
34 to 34.9	.55	.55	.55	$.38	$.43	.55	....	.89
35 to 35.9	.57	.57	.57	.40	.45	.57	....	.91
36 to 36.9	.59	.59	.59	.42	.47	.59	....	.93
37 to 37.9	.61	.61	.61	.44	.49	.61	....	.95
38 to 38.9	.63	.63	.63	.46	.51	....	....	.97
39 to 39.9	.65	.65	.65	.48	.53	....	....	.99
40 and above.	.67	.67	.67	.50	.55	....	....	1.01

Column 1—Stanolind Crude Oil Purchasing Co. posted above prices on March 5, effective in Kansas, Oklahoma, North Texas, Central Texas and East Central Texas, where it purchases oil. Magnolia Petroleum Co. posted same day but with these differences: Below 26 degrees, 40 cents; 26-26.9 degrees, 41 cents; 27-27.9 degrees, 42 cents; 28-28.9 degrees, 43 cents. Tidal Refining Co. and Tidal-Western Oil Corp. adopted new price schedule March 5. Mid-Continent Petroleum Corp., Continental Oil Co., H. F. Wilcox Oil & Gas Co., Eason Oil Co., Standard Oil Co. of Kansas, Sinclair Refining Co., White Eagle Oil Corp. and Producers Oil Co. met the price on March 6, Champlin Refining Co. on March 7, Carter Oil Co., The Texas Company, Humble Oil & Refining Co., Empire Pipe Line Co., Gypsy Oil Co. and Gulf Pipe Line Co. met Stanolind prices on March 10, Pure Oil Co. posted same schedule in Van, Texas, Pool, March 5.

Column 2—East Texas crude posted by Magnolia Petroleum Co. March 26.

Column 3—Standard Oil Co. of Louisiana and The Texas Company posted on March 10. Standard prices apply to Caddo, Homer, Haynesville, Bull Bayou, Sabine, Crichton, DeSoto, El Dorado, Cotton Valley, Sarepta and Carterville.

Column 4—Posted by Humble Oil & Refining Co., March 10. Adopted by other buyers same day.

Column 5—Posted by Humble Oil & Refining Co., March 10. Adopted by other buyers same day.

Column 6—Posted by Midwest Refining Co., March 5, 1931. All crude above 37.9 degrees 61 cents.

Column 7—Posted by Louisiana Oil Refining Co. and Atlantic Oil Producing Co., October 30, 1930.

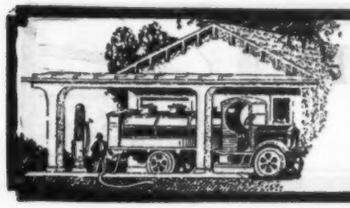
Column 8—Posted by Humble Oil & Refining Co., January 14, 1931, meeting Gulf Refining Co.'s price schedule posted October 30, 1930.

CALIFORNIA CRUDE OIL PRICES

(Posted by Union Oil Co. March 30 and the Standard Oil Co. of California March 31)

	Alamitos Hts., Signal Hill, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs Montebello, Huntington Beach, East Coyote, Richfield, Brea-Olinda	Santa Paula	Orcutt	Coalinga, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills
11 to 13.9	....	....	....	$.50
14 to 14.9	$.65	$.60	$.55	.55
15 to 15.9	.65	.60	.55	.55
16 to 16.9	.65	.60	.55	.55
17 to 17.9	.65	.60	.55	.55
18 to 18.9	.65	.60	.55	.55
19 to 19.9	.65	.60	.55	.55
20 to 20.9	.65	.58	.53	.53
21 to 21.9	.62	.56	.51	.51
22 to 22.9	.59	.53	.49	.49
23 to 23.9	.56	.50	.47	.47
24 to 24.9	.53	.47	.45	.45
25 to 25.9	.50	.44	.43	.43
26 to 26.9	.47	.41	.41	.41
27 to 27.9	.44	.38	.39	.39
28 to 28.9	.41	.35	.37	.37
29 to 29.9	.38	....	.35	.35
30 to 30.9	.35	....	....	....

For the time being the Union Oil Co. and the Standard Oil Co. will not post a schedule of crude oil prices for the Playa del Rey and Kettleman Hills Fields.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 7

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago*	14.0	15.0	3.0	9.0
Decatur, Ill.	14.4	15.4	3.0	9.0
E. St. Louis	13.7	14.7	3.0	8.2
Joliet	14.4	15.4	3.0	9.0
Peoria	14.4	15.4	3.0	9.0
Quincy	14.2	15.2	3.0	8.8
Davenport, Ia.	14.5	15.5	3.0	9.3
Des Moines	14.5	15.5	3.0	9.3
Keokuk	14.5	15.5	3.0	9.3
Sioux City	14.1	13.1	3.0	8.9
Duluth, Minn.	15.5	16.5	3.0	9.9
Mankato	13.1	16.0	3.0	9.7
Minneapolis	15.2	16.2	3.0	9.9
La Crosse, Wis.	16.2	17.2	4.0	10.0
Milwaukee	15.0	16.1	4.0	8.9
Madison	15.3	16.3	4.0	9.1
Detroit, Mich.	14.8	15.8	3.0	10.7
Grand Rapids	14.7	15.7	3.0	10.6
Saginaw	14.9	15.9	3.0	10.8
Evansville, Ind.	15.1	16.1	4.0	9.9
Indianapolis	15.3	16.3	4.0	10.1
South Bend	15.4	16.4	4.0	10.2
Fargo, N. D.	16.0	16.0	3.0	11.9
Huron, S. D.	16.3	17.3	4.0	10.7
Sioux Falls	15.8	14.9	4.0	10.4
K. C., Mo.	13.9	14.9	3.0	7.6
Springfield†	13.9	14.9	3.0	8.5
St. Louis†	12.9	13.9	2.5	8.3
St. Joseph	13.5	14.5	3.0	7.5
Wichita, Kans.	12.8	13.8	3.0	7.8
Bartlesville, Ok.	12.0	15.0	4.0	7.5

*Effective February 17, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons and over; and 4 cents off service station on purchases of 1,000 gallons or more per calendar month.

†State tax 2 cents; remainder city tax.

‡Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline: 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discounts on the previous month's purchases.

PACIFIC COAST TERRITORY

	Gasoline			Kero.
	Wh'ls'e price	Retail* price	Incl'ds tax of	tank wagon
Fresno	15.0	12.0	3.0	17.0
San Francisco	15.0	12.0	3.0	15.5
Los Angeles	13.5	10.5	3.0	15.5
Reno, Nev.	22.0	19.0	4.0	19.0
Portland, Ore.	17.5	14.5	4.0	16.5
Seattle, Wash.	17.0	14 0	5.0	16.5
Tacoma	17.0	12.0	5.0	16.5
Spokane	22.0	19 0	5.0	20.5
Phoenix, Ariz.	18.5	21.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 2-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	16.0	17.0	6 0	12.0
Baton Rouge	16.0	17.0	5.0	12.0
Alexandria†	17.0	18.0	6.0	12.0
Lafayette*	17.0	18.0	6.0	12.0
Lake Charles*	17.0	18.0	6.0	12.0
Shreveport	16.0	17.0	5.0	12.0
Knoxville, Tenn.	18.5	19.5	5.0	13.5
Memphis	15.0	16.0	5.0	10.0
Chattanooga	18.0	19.0	5.0	13.0
Nashville	17.5	18.5	5.0	12.5
Bristol	19.0	20.0	5.0	14.0
Lt. Rock, Ark.	17.0	18.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	15.25	17.25	4.0	9.25
McCook	15.75	18.75	4.0	10.75
Norfolk	15.75	17.25	4.0	9.75
N. Platte	16.75	18.75	4.0	10.50
Scottabluff	16.00	16.00	4.0	10.25

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	18.0	20.0	6.0	12.5
Augusta	18.0	20.0	6.0	14.0
Macon	18.0	20.0	6.0	13.0
Savannah	18.0	18 0	6.0	12.0
Birm'ham, Ala.	17.0	19.0	5.0	13.0
Mobile	17.0	19.0	4.0	13.0
Montgomery	17.0	19 0	4 0	13.5
Clarks'le, Miss.	18.0	20.0	5.0	13.5
Jackson	14.0	14.0	5.0	11.0
Natchez	18.0	20.0	5.0	13.5
Gulfport	16.0	16.0	5.0	13.5
Vicksburg	16.0	18.0	5.0	11.0
Jack'ville, Fla.	17.0	19.0	6.0	12.0
Miami	18.0	20.0	6.0	13.0
Pensacola	18.0	20.0	6.0	13.0
Tampa	17.0	19.0	5.0	12.0
Lexington, Ky.	17.0	18.0	5.0	12.0
Covington	16.0	17.0	5.0	11.0
Louisville	16.0	17.0	5.0	11.0
Ashland	17.0	19.0	5.0	12.0
Paducah	17.0	18.0	5.0	11.0
Bowling Green	19.0	21.0	5.0	14.5
Corbin	18.0	19.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N. J.	14.5	16.5	3.0	11.5
Newark	13.5	15.5	3.0	10.5
Annapolis, Md.	16.0	17.0	4.0	11.0
Baltimore	15.2	16.2	4.0	9.5
Cumberland	17.0	18.0	4.0	12.0
Wash'gton, D.C.	13.7	14.7	2.0	10.7
Danville Va.	17.8	18.8	5.0	11.8
Norfolk, Va.	16.3	17.8	5.0	10.0
Petersburg	17.3	18.3	5.0	11.3
Roanoke	18.0	17.0	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4.0	11.5
Keyser	17.1	18.1	4.0	12.1
Parkersburg	15.2	16.2	4.0	10.2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	17 0	18.0	6.0	11.0
Hickory	19 6	20 6	6.0	12.6
Mt. Airy	19 5	20 5	6.0	12 5
Salisbury	19.5	20.5	6.0	12.5
Charleston, S.C.	17.3	18.3	6.0	10.3
Columbia	19.2	20.2	6.0	12.2

Effective February 26, Standard Oil Co. of New Jersey has increased its dealer and commercial account discounts 1 to 3 cents per gallon in Maryland.

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers, except in Washington, D. C., and in Maryland where discount is 3 cents.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	15.0	18 0	4.0	10.0
Fort Worth	13.0	15.0	4.0	10.0
Houston	14.0	18.0	4.0	11.0
San Antonio	14.0	18.0	4.0	10.0
El Paso	14.0	18.0	4.0	12.0
Texarkana	16.0	16.0	4.0	11.0
Muskogee, Ok.	13.0	16.0	5.0	8.0
Okla. City	11.0	13.0	5.0	8.0
Tulsa	13 0	16.0	5.0	8.0
Ft. Smith, Ark.	15.0	16.0	6.0	11.0
Little Rock	17.0	18.0	6.0	11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16.6	17.6	2.0	15.6
New York*	15.3	15.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	15.5	15.5	2.0	13.5
Augusta, Me.	18.8	18.8	4.0	14.8
Manch'tr, N. H.	18.4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	*12.0	*14.0	...	12.0
Philadelphia	*13.0	*14.0	...	12.0
Scranton	*12.0	*14.0	...	12.0
Allentown	*12.0	*14.0	...	12.0
Altoona	*12.0	*14.0	...	12.0
Erie	*12.0	*14.0	...	12.0
Dover, Del.	15.0	17.0	3.0	12.0
Wilmington	15.0	17.0	3.0	12.0
Springf'd, Mass.	14.5	16.5	2.0	10.0
Fall River	14.1	15.1	...	10.0
Worcester	14.3	16.3	2.0	10.0
Boston	13.5	15.5	2.0	10.0
Providence, R.I.	13.7	15.7	2.0	10.0
Hartford, Conn.	14.5	16.5	2.0	10.0
New Haven	14.6	16.6	2.0	10.0

*Includes tax of 3 cents in Pennsylvania. Pennsylvania tax is collected by the dealer and paid by him direct to the State. Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	15.0	18.0	4.0	12.5
Pueblo	13.0	16.0	4.0	12.0
Grand Junction	13.0	19.0	4.0	16.0
Casper, Wyo.	15.0	18.0	4.0	10.0
Cheyenne	16.0	19.0	4.0	11.5
Butte, Mont.	19.0	22.0	5.0	16.0
Billings	20.0	23.0	5.0	14.5
Great Falls	20.0	23.0	5.0	16.0
Helena	20.0	23.0	5.0	16.0
Salt Lake, Utah*	18.0	17.0	3.5	16.0
Albu'que, N. M.	16.0	20.0	5.0	14.0
Boise, Idaho†	21.5	....	5.0	18.0
Twin Falls‡	21.5	....	5.0	18.0

*Less 4 cents. †Less 3 cents. ‡Less 2½ cents.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	15.0	16.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 14 cents.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	12.0	8.0
V.M.&P. naphtha	14.0	9.5
Cleaners' naphtha	16.2	11.0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

All dumps of 50 gallons or more ..... .07

Note—Outside Chicago furnace oils discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

TANK WAGON CHANGES

Standard Oil Co. (Kentucky) reduced the gasoline station price to 14 cents in Jackson, Miss., March 25. On March 16 the station price was advanced to 19 cents in Montgomery, Ala. On March 21 the kerosene price was reduced to 14 cents in Augusta, Ga., and on March 13 the gasoline station price was reduced to 18 cents in Savannah, Ga.

Magnolia Petroleum Co. reduced the gasoline tank wagon and station prices to 13 and 15 cents in Fort Worth, Tex., March 28. On March 27 the kerosene price was reduced to 8 cents in Oklahoma. On March 16 the kerosene price was reduced to 11 cents in Fort Smith and Little Rock, Ark.

Standard Oil Co. of Louisiana reduced the tank wagon price on kerosene 1 cent in Memphis, Tenn., April 1. On April 2 the gasoline tank wagon and station prices were reduced 1 cent in Memphis, Tenn., and New Orleans, La.

Standard Oil Co. of New Jersey advanced tank wagon and station prices 1 cent in North Carolina April 1 to equalize the increase in the state tax from 5 to 6 cents on that date.

Standard Oil Co. of California reduced the gasoline wholesale price to 18.5 cents in Phoenix, Ariz. On April 1 the gasoline wholesale price was advanced 2 cents throughout Washington to equalize the increase in the state tax from 3 cents to 5 cents. On the same date the Standard Stations, Inc., reduced the retail price to 14.5 cents in Portland, Ore.

Continental Oil Co. advanced the gasoline station price 1 cent in Pueblo, Colo., to 16 cents.

CRUDE PRICE CHANGES

Dale Oil & Refining Co. of Wichita Falls posted the following schedule for crude handled through its own lines, effective April 4: For below 36 gravity, 44 cents a barrel; for 36 to 36.9 gravity, 49 cents, with a 2-cent differential to 40 gravity and above at 57 cents. For crude handled through other lines there is a flat price of 63 cents a barrel. These prices applying in Wichita, Archer and Young Counties, and a flat price of 59 cents for Wilbarger County crude.

The Iowa Park Refining Co. met the Dale prices, both being effective Friday morning, April 4.

The Stoll Oil Refining Co. of Louisville, Ky., reduced its crude oil price 10 cents per barrel for Kentucky oil run through its lines, making the price 60 cents per barrel, effective April 1.

DETAILS OF BOZEMAN LINE

DENVER, Colo., Apr. 6.—Construction work on the natural gas pipe line from the Dry Creek Field in Carbon County, Montana, to Bozeman will be rushed by the Billings Gas Co., subsidiary of the Ohio Oil Co., and the project is to be finished this summer. The line will start at Dry Creek and go northwest to the town of Absarokee, thence to Reed Point. From Reed Point it will run almost due west to Bozeman by way of Livingston. A lateral will be constructed from Absarokee to Columbus to supply that town and other towns in the vicinity. First work will be the laying of crossings through the beds of Boulder, Stillwater and Yellowstone Rivers in order to get this work out of the way before the spring melting brings high water. The project will cost approximately $2,500,000.

CRUDE OIL PRICES

(Continued from Page 121)

leum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Mar. 6, 1931)

Lima	$ .90
Wooster	.99
Illinois	.80
Indiana	.50
Princeton*	.80
Plymouth	shut in
Western Kentucky	.75
Midland, Mich.* (Mar. 13, 1931)	.75
Dundee, Mich. (Oct. 24)†	
.....Same as Mid-Continent gravity scale	
Upper and Lower Traverse sands, Mich. (Oct. 28, 1930)†	
.....Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky. (Apr. 1, 1931)‡	.60
Oil Springs (Canada) (Oct. 28)‡	1.57
Petrolia (Canada) (Oct. 28)¶	1.50
Alberta (Canada)‖:	
50° and above (Mar. 1, 1931)	2.36
45 to 45.9° (Mar. 1, 1931)	1.87

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil, Ltd. ‖Posted by Imperial Oil, Ltd., and Regal Oil & Refining Co. of Calgary.

MEXICAN CRUDE

Panuco*	$ .56

*F.o.b. ship, based on January transactions and exclusive of taxes and bar dues.

Drake Fund Receives Prompt Approval

Announcement of Plan to Save Historic Well Site From Ravages of Floods and Ice Gorges Brings Generous Response

By Thomas F. Smiley

Gratifying responses have followed the announcement in The Oil and Gas Journal last week of plans to raise a fund of $60,000 for preservation of the Drake well site near Titusville, Pa., and creation of a state-maintained park on ground around it. Not only have generous subscriptions to the fund been sent to W. R. Boyd, Jr., chairman of the committee in charge, but oil men throughout the country express their approval of the plan to save this historic spot from obliteration by floods and ice gorges.

As was explained last week, it is planned to build a retaining wall, clean off the ground around the old well, do needed landscaping, construct park roadways and erect a caretaker's cottage which is to contain a museum room for keeping relics and records relating to the Drake well or to other early oil history. A bill providing for acquisition by the State of the park to be established and its maintenance by annual appropriations has been passed by the Pennsylvania House of Representatives. The bill is expected to be acted upon similarly by the Senate and to receive the signature of the Governor. It was introduced by Major A. R. Wheeler, member of the house from Endeavor, Pa., and one of the three trustees who are to supervise the rehabilitation and protective work at the well site until title to the property has been turned over to the State. The other trustees are S. Y. Ramage, of Oil City, Pa., and James H. Caldwell, of Titusville, both well known oil men.

Should Have Been Done Long Since

Writing from his winter home in Pinehurst, N. C., Mr. Ramage says:

"That no proper recognition of Colonel Drake's work, aside from the monument erected in the Titusville cemetery by the late Col. Henry H. Rogers and the granite boulder placed at the well by the Daughters of the American Revolution, has been undertaken by those who have made or inherited fortunes as a result of this 'strike' seems almost incredible. A movement has been launched by responsible and far-seeing persons to assure permanent preservation of the Drake well site. This should have been done long since. Unless it is done now the ravages of Oil Creek in flood time, with ice tearing away the banks contiguous to the well, will obliterate what remains of the well. An urgent appeal for nation-wide contributions in support of the undertaking is made. The wish is not only for large subscriptions from those who can afford to give generously in view of their profits from the business, but for modest ones from the many who will want to help but who cannot give large amounts. Proper recognition of all contributions will be made and the names will be preserved in a suitable book. This appeal must meet with hearty and wide response. Certainly all persons connected with the great business that has grown from Colonel Drake's exploit of 70 years ago will want to have a part in perpetuating the memory of it."

Whole-hearted Support Urged

Capt. J. F. Lucey, Dallas, Tex., president of the Lucey Petroleum Co., says: "The program adopted for preservation of the Drake well site must appeal to every oil man in the country and there should be whole-hearted support of the committee which has undertaken to take care of the details involved in such a project. Along with thousands of others now living far from the Oil Creek region, I did not realize that this historic spot where the oil industry as it exists today actually began was threatened with obliteration. That is something which must not be allowed to happen, and the plan outlined in The Oil and Gas Journal to raise $60,000 to do the needed protective work and establish a state-maintained park is practical and commendable from every viewpoint."

A. D. Aitkin, Denver, Colo., vice president of the Salt Creek Producers Association, writes as follows: "Independence Hall is more than the building in which the Declaration of Independence was signed. It has become a symbol of the birth of a nation in the hearts of the American people. The Drake well site at Titusville is more than a historical landmark. It stands as a monument to the beginning of one of the world's greatest industries and we all should be the more proud of it because it is in the United States. It is a patriotic duty to presrve it for posterity and I am heartily in favor of the movement."

Tardy in Honoring Memory

A. J. Hazlett, editor of the Inland Oil Index, comments: "Nearly everybody who accomplishes anything worth while to the human race has been recognized publicly in one way or another and Drake certainly did start something. While we have been tardy in properly honoring his memory, it is better late than never. The establishment of a park around the well site is preferable to any other plan because the natural scenery and surroundings lend themselves to the making of a park better than anything else."

Mr. Boyd and the other members of the committee in charge are hopeful that the entire amount of money needed for the undertaking will be pledged within the next two weeks or so. In addition to Mr. Boyd, who is executive vice president of the American Petroleum Institute, the committee includes Charles L. Suhr, president and general manager of the Pennzoil Co.; W. M. Irish, president of the Atlantic Refining Co.; L. M. Young, president of the South Penn Oil Co., and Christy Payne, head of the Standard Oil Co. (New Jersey) natural gas interests.

For the convenience of those who have not yet sent pledges or checks to Mr. Boyd a subscription blank is printed on this page. This may be filled out and sent to Mr. Boyd at the address given.

The Texas Company Will Withdraw Its Colombian Forces

NEW YORK, N. Y., Apr. 7.—The Texas Petroleum Company, Colombian subsidiary of The Texas Corporation, will withdraw its field staff from Colombia and refrain from further geological and development work in that country because of the Government's attitude as expressed in the new oil law.

The company retains its holdings of approximately 800,000 acres of fee lands in the Magdalena River Valley, but its entire force of geologists, who have been actively prospecting in Colombia for the past four years, will be withdrawn, and the company's working forces will be limited to watchmen at its various properties.

The Texas, Sinclair and Gulf companies last January jointly announced that they could not undertake development of oil lands in Colombia unless the government met 17 specific objections which these companies advanced against the new oil law. Three of these objections were met but failure to make the other concessions which the companies declared they would require to safeguard their investments in Colombia led to the withdrawal of The Texas Company. The Gulf Oil Corp.'s position has been somewhat complicated since it joined with the Texas and Sinclair companies in protesting the new oil law, through confirmation in part of its Barco concession, but it is expected that the Sinclair and Gulf companies will both stand with The Texas Company in their original position with respect to the new Colombian oil law.

FIFTH FIELD CONFERENCE

C. L. Cooper of the Oklahoma Geological Survey; George C. Branner, state geologist of Arkansas; Hugh D. Miser of the United States Geological Survey at Washington, D. C.; C. W. Honess of the Gypsy Oil Co. of Tulsa; John Fitts of Ada, Okla.; N. W. Bass of the Pure Oil Co. of Wichita, Kans.; Mr. Parks of the Arkansas Geological Survey, and C. S. Ross and P. B. King of the United States Geological Survey have just completed a four days' trip through the Ouachita Mountains between McAlester, Okla., Paris, Tex., and Hot Springs, Ark., preparing road logs, geologic sections and making other preparations for the fifth annual field conference sponsored by the Kansas Geological Society to be held in southern Oklahoma and western Arkansas between August 29 and September 5, 1931.

NEW YORK GAS LINES

BATH, N. Y., Apr. 4.—The Wayne town board granted the Quadrangle Drilling Co. right for extension of pipe lines. The Quadrangle company controls several gas producing wells in Wayne and vicinity, and it is desired to pipe this flow of gas to Binghamton and other points.

FEWER WELLS COMPLETED IN MARCH BUT THEY AVERAGE HIGH IN OUTPUT

Completed wells in March in the fields east of California showed a considerable decline compared with February, but the average initial production per well showed an increase. In February there were 416 oil wells completed with an average initial production of 1,183 bbls. per well, while in March 305 new oil wells produced an average of 1,950 bbls. per well in their first 24 hours. New work showed a slight decline—14 fewer rigs and 15 fewer drilling wells than at the close of February.

Following is the summary for all states east of California:

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	162	504	36	79
Central Ohio	30	290	7	16
Lima	11	135	2	8
Indiana	13	58	5	4
Michigan	5	133	1	2
Kentucky	50	637	17	17
Illinois	5	28	3	0
Missouri	1	0	1	0
Kansas	48	10,312	15	12
Oklahoma	102	174,912	36	13
North Central Texas	126	3,771	88	3
East Central Texas	91	262,421	22	1
East Texas	2	0	2	0
West Texas	31	3,939	13	1
Panhandle Texas	28	897	12	10
Gulf Coast	90	15,621	42	4
Southwest Texas	56	5,187	20	3
North Louisiana	25	1,665	17	4
Arkansas	5	390	2	1
Mississippi	2	0	2	0
Montana	5	12	1	3
Wyoming	1	0	0	1
Colorado	2	0	2	0
New Mexico	4	4,108	1	0
Total March	895	485,020	348	182
Total February	1,003	492,220	369	218
Difference	108	7,200	21	36

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Total
Eastern	58	123	181
Central Ohio	36	99	135
Lima	4	18	22
Indiana	3	53	56
Michigan	46	100	146
Kentucky	13	144	157
Missouri	0	1	1
Tennessee	0	17	17
Illinois	4	16	20
Kansas	25	137	162
Oklahoma	84	341	425
North Central Texas	32	170	202
East Central Texas	34	158	192
East Texas	15	28	43
West Texas	19	120	139
Panhandle Texas	17	65	82
Gulf Coast	15	136	151
Southwest Texas	25	184	209
North Louisiana	26	62	88
Arkansas	7	40	47
Missis'ppi	5	23	28
Alabama	2	3	5
Montana	12	57	69
Wyoming	9	89	98
Colorado	13	73	86
New Mexico	8	49	57
Utah	0	20	20
Total March	512	2,326	2,838
Total February	526	2,341	2,867
Difference	14	15	29

DRAKE WELL MEMORIAL PARK FUND

....., 1931

I hereby subscribe $..... toward the fund for preservation of the Drake well site, to be paid on ....., 1931, and ....., 1931.

Cash herewith, $.....

Signature.....

Address.....

.....

Fill out and mail to W. R. Boyd, Jr., American Petroleum Institute, 250 Park Ave., New York, N. Y. Make checks payable to "Drake Well Memorial Park Fund."

Cities Service-Richfield Awaits Audit

R. A. Broomfield Is Chosen Executive Vice President of Barnsdall Corp. Company Reports and Statements Summarized

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 6.—Definite plans by Cities Service Co. for reorganization of Richfield Oil Co. of California will not be formulated until the final audit and appraisal are completed by the federal receiver in equity, according to W. A. Jones, vice president of Cities Service Co., who left Los Angeles for New York today after an extensive survey of the Richfield situation in California. Cities Service has bought heavily into Richfield in the open market during the past six months and in some quarters is credited with controlling 51 per cent of Richfield stock.

Mr. Jones' statement, indicating a further delay in the Richfield reorganization program, was taken to confirm reports which have been circulated in local financial circles during the past week that the Cities Service plans for reorganizing the company had struck a snag. Mr. Jones' statement emphasized, however, that his departure from Los Angeles at this time does not indicate that Cities Service has withdrawn from Richfield and he joined with William C. McDuffie, Richfield receiver, in denying that a plan submitted by Cities Service had been rejected by the Richfield receiver.

Failure to arrive at a reorganization plan for the company is attributed to disclosures by preliminary audits of losses and depreciated values before the company went into receivership. It is said unofficial reports of the preliminary audit indicated an operating loss of more than $13,000,000 for 1930, a deficit in the surplus account of more than $25,000,000. These losses comparing with 1929 profit of $8,554,494 and capital and earned surplus of $15,198,839 as reported by Richfield.

H. L. Doherty, who went to Los Angeles with Mr. Jones some time ago to survey the Richfield situation, returned to New York several days ago.

Barnsdall Corp.

Barnsdall Corp. declared dividends of 25 cents each on the Class A and Class B common stocks, payable May 11 to stock of record April 14. Three months ago, similar payments were made.

The following statement was issued:

"Directors, in determining to pay dividend, recognized the fact that earnings were not on a parity with last year, but felt the stockholders were entitled to receive same by reason of the standard depletion and depreciation maintained by the company; and the additional fact that the Elwood Field in California, one-half of which is owned by the Barnsdall Corp., had never been carried upon the books of the company at any value other than the actual investment in material and plant installation; and also the additional fact that officers estimate the corporation will gain in cash a substantial sum during the first nine months of this year over and above the dividend requirements."

At a meeting of directors all officers were re-elected and R. A. Broomfield, president of the Barnsdall Oil Co. of California, was made executive vice president.

Phillips Petroleum

"Net income of Phillips Petroleum Co. before depletion, depreciation and amortization was $2,544,400 for the first two months of 1931, which was $158,000 less than the same period last year," states Frank Phillips, president. "Depletion, depreciation and amortization reserves are now being accrued at an annual rate of $16,500,000, compared with $14,400,000 last year.

"The company has purchased and has on hand practically its entire requirement of $2,000,000 of its debentures to meet sinking fund requirements for 1931. Its cash position is strong and it is sufficiently financed to meet its requirements. Reductions in expense in all departments are being vigorously prosecuted to meet the reductions in net income caused by low prices."

In the first quarter last year, not including Independent Oil & Gas Co., which was acquired late in 1930, Phillips reported net profit of $4,328,645 before depreciation, depletion, etc., and $1,604,844 after charging out $2,723,801 for these purposes. Crude oil prices were reduced in the Mid-Continent by the major companies on March 5, this year.

Simms Petroleum

Alfred J. Williams, vice president of the Simms Petroleum Co., has been elected a director. The membership of the board has increased from 11 to 12 directors.

Mexican Seaboard

The Mexican Seaboard Oil Co. reports for 1930 net earnings of $605,873 after charges, including depletion and lease abandonments, depreciation and taxes, against a loss of $28,850 for 1929. Operating revenue was $3,295,054, against $3,269,979. Company abandoned 52,619 acres of Venezuelan property in 1930.

Standard of Indiana

Earnings of the Standard Oil Co. of Indiana and its subsidiary interests in the calendar year 1930 are shown by a preliminary consolidation of figures to be $46,371,000 or $2.73 a share on the 16,996,595 shares outstanding on December 31 last.

Announcement to this effect was made by Edward G. Seubert, president of the company. The total stated includes the earnings of Standard of Indiana itself, earnings of wholly owned subsidiaries, and those portions applicable to the majority interest of earnings of companies controlled but not fully owned. It represents the net after provision for depreciation, depletion, amortization, adjustment of inventory of petroleum products to conform to the principle of valuation at the lower of cost or market price, and all Federal income and foreign taxes.

Net earnings of Standard of Indiana proper were $78,499,754 in the calendar year 1929. Consolidated earnings were not reported for that year. Preparation of the consolidated statement was instituted by the company this year.

Dividends were paid during 1930 at the rate of $2.50 a share. For the first quarter of 1931 the dividend was declared at the rate of $2 a year.

A final and complete consolidated balance sheet will be furnished to stockholders at the annual meeting at Whiting, Ind., May 7, 1931.

Dow, Jones & Co. announce that at the annual meeting of the Standard Oil Co. of Indiana, to be held in Chicago on May 7 stockholders will be asked to approve an increase in the directorate from 11 to 15. This increase is simply to provide for the future and is proposed at this time because the company plans to reincorporate under the new State of Indiana Corporation Act passed in 1929. The present company was incorporated in Indiana in 1889 under an act which was passed in 1852 and has now become obsolete.

Mid-Continent Petroleum

Report of Mid-Continent Petroleum Corp. and subsidiaries for year ended December 31, 1930, shows net profit of $1,493,056 after depreciation, depletion, abandoned and surrendered leases and after deducting $1,421,306 adjustment of crude oil inventory. This is equivalent to 80 cents a share on 1,857,912 no-par shares of stock, and compares with net profit in 1929 of $7,683,378, or $4.09 a share on common stock, after allowance for dividend requirements on 7 per cent preferred stock redeemed on March 1 of that year. The corporation omitted the regular quarterly dividend of 50 cents which was due to be declared at this time.

The following statement was issued:

"The company earned last year from operations $1.56 a common share but owing to drastic cuts in the price of crude oil during the latter part of the year and extremely low prices for refined products, it was necessary to adjust inventory to market prices as of December 31, which reduced net earnings to 80 cents a share.

"Since the beginning of the year operations, after deducting depreciation and depletion, have not been on a profitable basis and a second cut in the price of crude oil in March forced a further readjustment in inventory.

"The company has no funded debt, no bank loans and no preferred stocks. The ratio of its current assets to current liabilities is about 9 to 1 and the net working capital, after all inventory adjustments is approximately $9 a share, of which about $4 is in cash."

Vacuum Oil

At the annual meeting of Vacuum Oil Co. directors were re-elected. Holt S. McKinney has been appointed treasurer.

Skelly Oil

Report of Skelly Oil Co. and subsidiaries for year ended December 31, 1930, shows net profit of $1,916,871 after interest, taxes, depreciation, depletion, etc., equivalent after dividends paid on 6 per cent preferred stock, to $1.39 a share (par $25) on 1,013,262 shares of common stock outstanding at end of year. This compares with $5,786,490 or $5.28 a share on 1,095,581 shares of capital stock in 1929, when no preferred stock was outstanding.

Salt Creek Consolidated

Profit of Salt Creek Consolidated Oil Co. for year ended December 31, 1930, was $564,784 after expenses and ordinary taxes but before depreciation, depletion, etc.

H. F. Wilcox Oil & Gas

Report of H. F. Wilcox Oil & Gas Co.

(Continued on Page 131)

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

Week ended April 1, 1931						Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1928		1929		1930	
High	Low	Sales	High	Low	Close						High	Low	High	Low	High	Low
1	⅛	1,600	1	¾	¾	Atlantic Lobos	499,448	N.P.	....	5-28-30	..	..	..	..	1	⅛
12⅞	8	50	8	8	8	Borne Scrymser	$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¼
51	40	1,300	50⅜	50⅛	50⅛	Buckeye Pipe Line	$10,000,000	$50	$1Q	3-14-31	76	53	74½	55	69	39⅞
125	110	400	119¾	115¾	115¾	Chesebrough Mfg.	$3,000,000	$25	$1Q‡	3-31-31	161	117	210	130	184⅞	104¼
30	20⅝	200	27	25	27	Cumberland Pipe Line	$1,500,000	$50	50cQ	3-16-31	114	67	75⅝	40	65¾	20¼
29¾	27	400	27½	27½	27½	Eureka Pipe Line	$5,000,000	$100	$1Q	2- 2-31	88	64⅛	70½	42	54¾	26
2⅛	1⅞	200	2	2	2	Galena Signal Oil	$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	54⅝	1,800	54	54¾	54¾	Humble Oil & Refining	$74,103,300	$25	50cQ	4- 1-31	114¾	59½	128	74⅛	119	57¼
18¼	14⅝	1,100	15	15	15	Imperial Oil of Canada	(sh) 25,421,768	N.P.	12½cQ	3- 2-31	104	56¾	41	22	30	15
21⅛	16	700	17⅞	17⅞	17⅞	Indiana Pipe Line	$3,000,000	$10	50cQ	2-14-31	91⅞	74⅜	41⅞	26	41	14½
15½	11¾	2,800	12	11⅝	11⅝	International Petroleum	(sh) 14,247,088	N.P.	25cQ	3-16-31	55	35	30⅜	15	24	11⅜
17½	12½	900	15¾	14¾	14¾	National Transit	$6,362,500	$12.50	25cQ	3-16-31	32⅜	19⅜	25⅛	10⅛	22⅜	11½
14½	10¼	1,200	10⅜	10¼	10¼	New York Transit	$1,000,000	$10	25cQ	1-15-31	75	38½	17½	10	21⅜	10⅛
30	28	100	30	30	30	Northern Pipe Line	$2,000,000	$50	$28A	1- 2-31	69	56½	63	41	54	26¼
15½	13⅛	200	15½	15½	15½	Penn Mex Fuel	$10,000,000	$25	....	12-15-30	84	28	44½	20	32	12
8	6	200	8	8	8	Solar Refining	$4,000,000	$25	....	12-20-29	..	..	50	29	33	4⅞
14	10	100	13⅝	13⅝	13⅝	Southern Pipe Line	$1,000,000	$10	50c	3- 2-31	19	15	22½	13	20⅞	8⅝
23⅞	18	200	18⅜	18	18	South Penn Oil	$30,000,000	$25	25cQ	3-31-31	71⅞	36¾	60¼	35⅛	45⅞	16⅛
36	33	300	33½	33	33½	Southwest Pennsylvania Pipe Line	$1,750,000	$50	$1Q	3-16-31	102	70	70	60	64	32
38½	30¾	7,000	31	30¾	30⅞	Standard Oil of Indiana	$348,175,069	$25	50cQ	3-16-31	95⅞	70⅞	63	45	59⅞	30
23⅝	20½	6,500	21⅛	20⅛	20⅛	Standard Oil of Kentucky	$25,654,516	$10	40cQ	3-31-31	179¾	122¼	46⅞	29	40½	18⅝
36½	32½	900	29¼	29	29	Standard Oil of Nebraska	$4,649,225	$25	50cQ	3-20-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	49	1,000	49¼	49	49	Standard Oil of Ohio	$14,000,000	$25	62½cQ	1- 2-31	134	71	129	60	108½	43¼
No sales.						Swan-Finch Co.	$861,466	$25	....	1-15-29	23½	16	18	10	10	4
69¾	52⅝	4,600	54¼	53⅝	53⅝	Vacuum Oil Co.	$126,180,350	$25	$1Q	3-20-31	111	72	133¾	75	97⅞	45⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

Week ended April 1, 1931												1928		1929		1930	
High	Low	Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	High	Low	High	Low	High	Low
1¾	5/8	3,300	1⅜	1¼	1⅜	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3⅛	8⅝	1⅛	4½	⅛
16⅞	13½	200	13½	13½	13½	British American Oil Corp. (new) coup.		1,311,321	N.P.	20cQ	1- 2-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	2,800	1⅜	1⅛	1⅛	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2¾	⅝
20¾	15	67,900	18⅝	18¼	18⅝	Cities Service	(sh)	24,290,359	N.P.	30cA‡	3- 2-31	90⅞	54	68⅛	20	44¼	13
84¾	79¾	2,200	83¾	83⅝	83⅝	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	3- 2-31	103¼	94½	98¾	84	93⅞	78¼
½	1/8	800	⅜	⅜	⅜	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	2	200	2	2	2	Consolidated Royal		$5,000,000	$10	7½cQ	1-25-31	8⅞	6¼	11⅛	2½	5⅞	2
3½	2⅞	1,200	3	2⅞	3	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	17½	9½	11¾	5⅝	7⅝	3
⅝	⅜	300	⅜	⅜	⅜	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	3½	300	3½	3½	3½	Darby Petroleum		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	2⅝	1,200	4	3¾	3¾	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40⅛	30	400	40⅛	38	40⅛	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20¾	60	30
75½	62	3,500	64	62	62	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	1- 1-31	165	101⅛	209	115	166⅞	58½
⅝	⅜	11,600	⅝	½	1/16	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅜	1⅜	⅜
1⅞	⅝	1,200	1	¾	¾	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	⅝	2,100	1	1	1	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4⅜	½
6¾	5⅝	200	6	5⅞	5⅞	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	20¼	1,100	20½	20¼	20¼	Lone Star Gas	(sh)	5,000,000	N.P.	25cQ	12-31-30	69⅛	48½	67⅞	28	55⅞	19⅝
⅜	⅛	600	1/8	1/8	1/8	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¾	⅛	½	⅛
5	3	100	3½	3½	3½	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅜	1½	700	4¼	4¼	4¼	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2⅜	6⅜	2¼	7½	1⅜
½	¼	3,200	½	⅜	½	Mountain & Gulf		$4,000,000	$1	1½cQ	1-15-31	1⅜	.76	1½	¼	¾	⅜
5⅞	4⅜	1,500	4½	4½	4½	Mountain Producers		$1,682,182	$10	25cQ	1- 2-31	28⅞	19½	22⅞	7	12⅛	3¾
1½	1⅛	4,500	1½	1¼	1½	New Bradford Oil		$1,095,291	$5	7cQ	1-15-31	5⅝	4¼	5	2½	3½	1⅛
3	1⅞	1,200	2⅝	2½	2½	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3¼	1¾	800	3	3	3	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	¼	6,400	⅜	¼	⅜	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	1⅛	1,400	1⅜	1⅜	1⅜	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
		No sales.				Red Bank Oil	(sh)	250,000	N.P.	....	.....	18	4⅞	16	9⅝	10⅛	1½
1⅜	1	2,200	1⅛	1⅛	1⅛	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅜	1
3	2	1,100	2¼	2¼	2¼	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	3	8⅝	2
1⅜	1	300	1⅛	1	1	Salt Creek Consolidated	(sh)	1,286,300	$10	7cQ	1- 2-31	7¼	5½	5⅞	1⅞	2½	½
7¾	6⅛	2,400	6¼	6⅛	6⅛	Salt Creek Producers	(sh)	1,496,859	$10	50c	2- 2-31	35	23⅛	25⅞	9	15¼	5¼
		No sales.				Savoy Oil		$750,000	$5	....	.....	3½	1	2½	1/16	1	⅛
5¼	2⅝	3,600	3⅝	3½	3⅝	Sunray Oil Corp.	(sh)	1,163,185	$5	5%Q§	1-15-31	..	..	12	5⅝	10	2
1⅞	⅞	400	1	1	1	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅜
3½	1½	100	3½	3½	3½	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
⅞	⅜	1,500	¾	⅝	½	Y Oil & Gas		100,000	N.P.	....	.....	8⅜	2⅛	2⅞	½	2½	⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

Week ended April 1, 1931												1928		1929		1930	
High	Low	Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	High	Low	High	Low	High	Low
23	17½	2,300	20	19½	19⅝	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-30-31	43⅞	27⅛	42⅝	17½	31½	16⅛
12⅜	7	700	9	9	9	American Republics Corp.	(sh)	209,180	N.P.	....	.....	85	51⅛	64¾	12½	37	5⅛
31	26½	†10	31	31	31	Associated Oil		$57,260,300	$25	50cQ	3-31-31	53⅜	37½	47¼	34½	51	30
23⅝	18	9,600	18⅜	17¾	17¾	Atlantic Refining		$66,763,775	$25	25cQ	3-16-31	66⅝	50	77⅞	30	51⅜	16⅝
14½	11	9,700	11	10¼	10¾	Barnsdall Corp. A		$56,546,600	$25	....	11- 6-30	54	20	49½	20	34	8⅝
12	9	3,100	9¼	9	9	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	.....	..	..	47⅞	18	30½	7¾
47	24¼	7,700	33	31	31⅛	General Asphalt	(sh)	413,333	N.P.	75cQ	3-16-31	94⅞	68	94¾	42¼	71½	22⅜
68½	35¼	8,200	52½	50⅛	50½	Houston Oil		$24,968,600	$100	....	.....	167	79	109	26	116⅞	29¼
14⅛	8¼	7,000	11⅜	11¼	11¼	Houston Oil (new)	(sh)	998,744	$25	....	.....	..	..	..	..	11¾	6⅝
4⅝	3⅝	2,300	3⅝	3½	3⅝	Indian Refining		$12,564,070	$10	....	.....	39⅝	9	53	13⅛	17	2
4½	3¾	1,300	4	4	4	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	2⅛	1,500	2¼	2⅛	2⅛	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅝
19¾	10⅝	4,300	16⅞	16¼	16½	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅝	59⅜	8¼	37	9¾
16¾	10½	9,900	11¾	10½	10⅝	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	12½	9,800	13⅝	12½	12½	Ohio Oil	(sh)	6,648,052	N.P.	25cQ	3-14-31	84	58½	79⅞	64¼	32	16
35⅛	32	400	32	32	32	Pan American P. & T.		$50,084,700	$50	....	12-20-27	50⅞	38¾	69	40½	46½	42
36½	32	200	33	33	33	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	59⅞	37¾	69¼	40½	67¼	30
4¼	2⅜	1,200	2½	2⅜	2⅜	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1⅜
		No sales.				Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	80	47½
16⅝	9⅞	40,000	10⅝	9⅞	9⅞	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	⅝	2,400	⅞	⅞	⅞	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	1⅜	2,300	2¼	2⅛	2⅛	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	2-16-31	7	3½	5⅞	½	7⅛	1⅜
30⅜	12¾	2,300	14	13½	13½	Prairie Oil & Gas		$60,848,000	$25	50cQ	3-31-31	68	46	65⅜	40½	54	11¼
26½	17⅞	3,800	21⅛	20⅛	20⅛	Prairie Pipe Line		$101,250,000	$25	50cQ	12-31-30	280	172	65	45	60	16⅝
6	2½	100	3¾	3¾	3¾	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	11⅞	†30	14¾	14¾	14¾	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	8½	400	8⅞	8½	8⅞	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30¾	20	27¼	7⅝
6⅜	2¾	2,800	2⅞	2¾	2⅞	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	28	40⅝	20	9¾	4⅛
10¼	5⅜	1,500	6⅞	6¾	6¾	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25⅜	5
42⅝	37	3,700	37⅛	36½	36½	Royal Dutch, N. Y.	(sh)	611,303	....	$1.3404	1-30-31	64	44⅝	64	43⅛	56½	36⅞
34	29⅛	200	31	31	31	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	1-23-21	47⅞	41⅜	51½	40⅝	48⅜	26
10¼	6⅞	8,900	7¼	6⅞	7	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31¾	19	25½	5¼
11	7	1,100	7½	7½	7½	Simms Petroleum		$8,353,620	$10	....	9-15-30	27¼	18⅛	40⅛	15	37	5⅝
15⅞	10⅛	18,900	11⅞	11⅝	11⅝	Sinclair Consolidated	(sh)	5,500,000	N.P.	25cQ	1-15-31	46⅜	17⅜	45	21	32	9¾
103	95	400	103	102½	102½	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	2-14-31	110	102½	111	103	112¼	86
12⅞	8⅛	9,400	8¾	8⅛	8⅛	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	42	10⅛
51⅜	42¼	19,700	43¼	42¼	42½	Standard of California	(sh)	12,594,098	N.P.	62½cQ	3-16-31	80	63	81⅞	51½	75	42¼
19	14⅝	3,300	15	14⅜	14⅜	Standard of Kansas		$8,000,000	$25	25cQ	3-16-31	37⅜	15	33¾	18	49	14⅜
52½	41⅛	34,900	42	41⅛	41⅜	Standard Oil of New Jersey		$634,999,200	$25	25cQ‡	3-16-31	59⅜	37¾	83	49	84⅞	32½
26	21	14,200	21¼	21	21⅛	Standard Oil of New York		$445,223,675	$25	40cQ	3-16-31	33¼	28¾	48⅛	31¾	40⅜	19¾
45¼	39½	100	40½	40½	40½	Sun Oil	(sh)	1,416,869	N.P.	25cQ	3-16-31	77	31½	68¾	55	70	39
1¾	¾	100	1¼	1¼	1¼	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	¾
36¼	27½	9,700	28	27⅝	28	The Texas Corporation		$246,204,900	$25	75cQ	1- 1-30	74¾	50	71⅞	50	60½	28¼
6½	4½	2,000	4⅝	4½	4½	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	10½	200	18	17	18	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	3-31-31	41½	19⅝	40	14	31	13
83	69¼	300	70	70	70	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	2-16-31	100⅛	86	97½	85⅛	94⅞	71
9	6½	1,800	6⅝	6½	6½	Tide Water Associated	(sh)	5,560,424	N.P.	30c8A	2-16-31	25	14¾	23½	10	17⅜	5⅞
68	55	1,200	59	59	59	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	1- 2-31	..	..	90⅞	74⅛	89¾	55
26⅝	20¾	7,600	21¼	20¾	20⅞	Union Oil of California		$104,342,375	$25	50cQ	2-10-31	58	42⅜	57	42⅛	50	20⅛
25⅛	20	700	21½	20	21½	Union Tank Car	(sh)	1,254,048	$100	40cQ	3- 2-31	128⅛	110	163¾	121⅞	38½	23
7¾	4¼	100	4½	4½	4½	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9¾	6¼	1,200	7½	7¼	7¼	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6½

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

MOVEMENT OF PIPE IN THE SUBSOIL

(Continued from Page 27)

started the instant the warm water was introduced into the pipe. The expansion continued at an apparently unabated rate throughout the entire period of the test.

This indicates that the soil had not gripped the pipe with sufficient force to exert any restraint upon expansion, within the period of approximately 90 days.

Further experiments will be conducted in an effort to improve the method for uniform heating of the pipe. There has lately been perfected a contact type thermometer, and an effort is now being made to secure the use of such an instrument.

When our procedure proves satisfactory it is intended to make observations on pipe that has been in the soil for a period of five years. This will introduce the time element. The location for such a test has been selected in soil of the same texture as the experimental setup.

The test will continue throughout the year, or until completed. A record will be kept of all observations and conditions, and a final report submitted to the pipe joint committee.

PROGRESS IN STUDY OF SOIL CORROSION

(Continued from Page 27)

trical resistivity are corrosive, it is known that severe pitting also occurs in some soils very low in salts and consequently of high resistivity. A study of one such region by Holler and later by Denison indicated that in the area examined the total acidity of the soil was an indication of the corrosivity.

Laboratory studies made by Doctor Denison on the acid soils covered by the the Bureau of Standards soil corrosion investigation indicate that a relation of acidity corrosivity exists for a large group of soils, but the scope of this method of identifying corrosive soils has not been as well defined as that of the methods involving electrical resistivity.

In many localities there is as much difference between the upper and lower horizons of a single soil as between two widely separated soils. The indications which an explorer will obtain will, therefore, often depend upon the depth at which he takes his soil sample or makes his test. It can be shown that in many places corrosion depends not only on the type of soil but upon the depth at which the pipe is laid, the manner in which the trench is backfilled and the apparatus or structures to which the line is connected. It seems possible that if only certain sections of the line receive a protective coating, the corrosion of other parts of the line will also be affected.

It is probable that on account of the difficulties cited above it will seldom be practicable to predetermine accurately the corrosion to which a long pipe line will be subjected. Nevertheless, it is probable that even now a careful survey of a pipe line route for the purpose of determining the corrosiveness of the soils encountered is more than justified if the work is undertaken by someone familiar with soil corrosion problems.

Difficulties Encountered

The thing which raises the greatest doubt as to the advisability of a soil corrosion survey is the uncertainty as to the proper method for providing against the action of the corrosive soils after they have been located.

Such data as are available indicate that the conditions under which pipe lines are frequently laid make it very difficult if not impossible to properly apply certain types of protective coatings. There is also evidence that some protective coatings which are satisfactory under some conditions fail when exposed to others. Unfortunately, the necessary requirements for pipe line protection under various soil conditions are but partially understood. The maker of coatings has no sure way of determining whether his new product will render better service and the purchaser no rapid means of determining whether a proposed product will fulfill his requirements. Most data on field performance of coatings are indefinite as to the exact performance of the material reported upon and as to the soil conditions affecting the installation. On this account data on the failure or success of a coating in one part of the country are frequently of little real help in the protection of a new line.

The Bureau of Standards, through its own employes and through the research associates furnished by the American Gas Association and the American Petroleum Institute, is accumulating a large quantity of data in which the performance of protective coatings is related to soil conditions, but it will be several years before definite conclusions can be drawn concerning many of the materials studied.

In addition to field tests of proprietary coatings, an attempt is being made to determine the fundamental requirements for a satisfactory coating and to develop methods for quickly determining whether a new coating is likely to be satisfactory.

KETTLEMAN GASOLINE PLANT VERY UNIQUE

(Continued from Page 26)

unit. By using a discharge pressure of 185 pounds from the oil coolers and into the booster pump suction we reduce the number of stages required in this pump. The fewer stages required in this pump the less heat put into the cold lean oil which is now out of the coolers and en route to contact the gas in the high pressure absorbers.

Unit No. 2 is similar to Unit No. 1 except the pump arrangement and absorber unit characteristics. True the still is 60 inches in diameter and has a capacity of 40,000 gallons of gasoline per day with the same oil rate as that of Unit No. 1. The lean oil from the No. 2 still passes through the exchangers as in No. 1 unit. Here the lean oil pump picks up the entire volume and passes it on; 75 per cent to the low pressure absorber and reabsorber and the remaining 25 per cent is boosted into the one 48-inch 20-tray absorber similar to those of Unit No. 1. The fat oil returns from this high pressure absorber to the still following a flow similar to Unit No. 1. The fat oil from the low pressure absorber at 60 pounds per square inch gauge flows into a common low pressure fat oil vent tank. The vapors from this tank pass back to the reabsorber, while the oil is picked up and forced into the fat oil line at 125 pounds per square inch gauge just before it enters the exchanger bank.

The overhead from each still passes through its own condensers and the two tail streams flow into a common accumulator. A reflux pump returns the required amount of this condensate to each still for reflux. The amount to each still is governed by the equilibrium temperature in the top of the still. The excess of condensate, which is raw gasoline, is pumped into the 10'x33' stabilizer feed tank. All of the pumps required for the above movement of oils and gasoline together with the water pumps are located in the central pump house. The pumping of water, oil and reflux is accomplished by centrifugal pumps mounted two or three on a shaft operated by turbines. The turbines may be run either by gas or steam. The lean oil pump and lean oil booster pump for Unit No. 1 are on the same shaft. The oil pumps of Unit No. 2—lean oil, lean oil booster and fat oil pumps—are mounted on a common shaft. A spare unit with a lean oil pump and lean oil booster the same size as those of Unit No. 1 and a fat oil pump similar to Unit No. 2 is manifolded between the other two pump units. The water pump and spare, each of 4,300 gallons per minute capacity have the still reflux pump and spare mounted on the tail of the shaft. The reciprocating gasoline stripping pumps are located at the west end of the storage tanks. A small reciprocating rerun pump is located here also. All of the above pumps may be run either on gas or steam. When gas operated, the

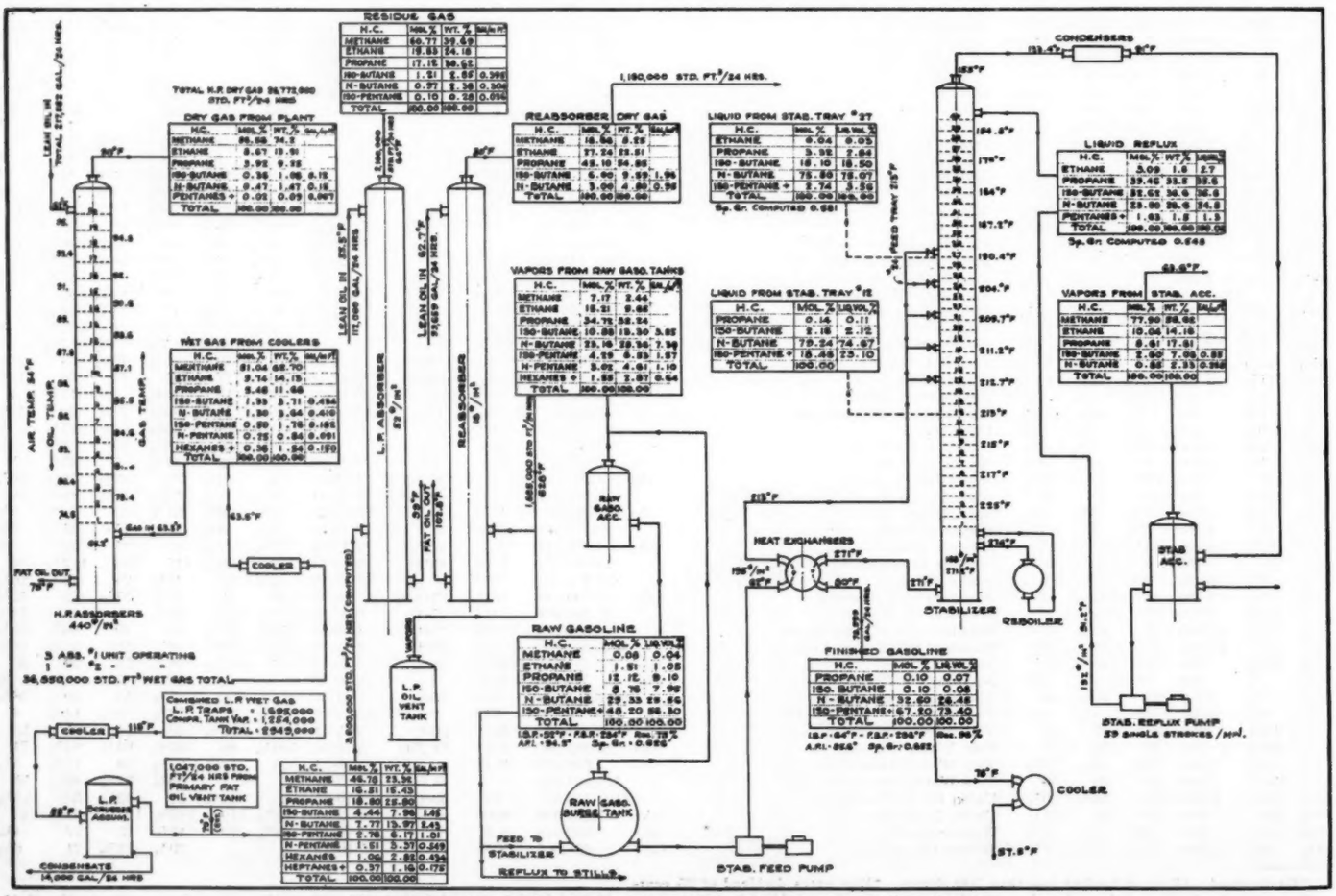


Figure 1—Test data showing the thoroughness of the stripping process at absorption plant.

gas is heated through a steam tubular heater to 190° F., thus eliminating any chance of moisture freezing in the turbines.

The 60-inch diameter 40-tray stabilizer, capacity 150,000 gallons per day feed, is fed and refluxed by long coupled simplex steam driven pumps. All heat exchangers, preheaters and reheaters are fitted with by-pass valves. This coupled with removable body and channel covers permit cleaning and replacing tubes without breaking a pipe connection or throwing the distillation unit off the line. The removable tube bundles are of admiralty mixture tubes, while the shells are cast semisteel, all of which minimizes corrosion. All water cooled apparatus is straight admiralty mixture 1-inch diameter tubes expanded into cast semisteel or cast steel headers and installed in the base of the ventilator separator louver cooling tower. The units are in parallel and may be by-passed without shutting down the unit. The tubes may be replaced without breaking pipe connections.

Spray distributors with less than one pound head are used both over the cooling tower and over the open coolers. The cooling tower is 366 feet long, 50 feet high and 20 feet wide. Its ample size gives excellent cooling in times of absolute calm. All gas before it enters the plant is cooled by means of open sections in the cooling tower. As shown on accompanying chart, the high pressure gas is 62° F. and low pressure 82° F. It is essential to cool the high pressure gas as low as possible to conserve oil circulation. The condensate and gas from the coolers pass through a scrubber accumulator. The condensate is then piped to the stills and introduced into the rectifying or fractionating section. This process not only saves reflux but assures good color and endpoint of this drip condensate.

An absorption oil reclaiming system keeps the oil at the proper initial and removes the heavy ends and gum. This is accomplished by merely drawing off a small portion (one-half of 1 per cent) into a steaming column. The overhead is returned to the main system as good oil, while the heavy residue is dumped.

One feature not to be overlooked is the water treating plant. All water used, cooling tower make-up as well as boiler feed, is treated. Now after five months of operation, no scale is formed on the coils in the cooling tower; and the heat transfer rates remain practically constant. Another sound idea was the selection of boilers. Nine regular oil field locomotive type boilers were installed in the beginning when the pumps were to be gas driven. It was contemplated to replace these with a larger permanent installation when the characteristics of field were determined. This change is now in progress. Four 325-horsepower, 250-pound S.W.P. water tube boilers will be in operation this month. The old boilers will be used for drilling purposes. These new boilers, like the old, will operate at 175 pounds per square inch gauge and deliver superheated steam at 400° F. The pressure may be increased if needed to 250 pounds. All of the condensate from preheaters, reheaters and reboiler is returned to the boilers together with the major portion of pump exhausts. Recently a small pump has been hooked up to the pump house oil sump where is collected all pump leakage and drains from the oil equipment. This waste oil is reclaimed by feeding into the absorption oil rerun unit.

This paper does not deal upon the merits of oil or gas intercoolers. It will be seen that 36,850,000 cubic feet per day of wet gas weighing some 2,150,000 pounds will contain more heat than 217,582 gallons of absorption oil weighing some 1,500,000 pounds. Therefore, the first and most important thing to do is cool the inlet gas as low as you do the absorption oil. Once the gas goes into the absorber it will begin to lose weight while the absorption oil gains by the weight of gasoline absorbed. Thus the marked difference in weight of 650,000 pounds will be greatly diminished.

We may intercool the gas, oil, or both. In a high pressure installation such as the one described, after first having cooled the lean oil and high pressure wet gas as low as possible, and it was desirable to further decrease the oil-gas ratio, I would install an oil intercooler below the second tray from the top. This intercooler should be outside the absorber shell and blocked off with valves. Should tubes fail or become fouled or clogged the intercooler could be brought back to its original state of efficiency without interrupting the service of the absorber.

Figure 1 shows an oil-gas ratio of 5.9 gallons per 1,000 cubic feet when running at 440 pounds per square inch gauge. This ratio virtually strips the gas of pentanes and heavier components. Only 187 gallons per day of these constituents remain in the total volume of 26,772,000 cubic feet of dry gas (36,000,000 of wet gas).

Figure 2 is self-explanatory.

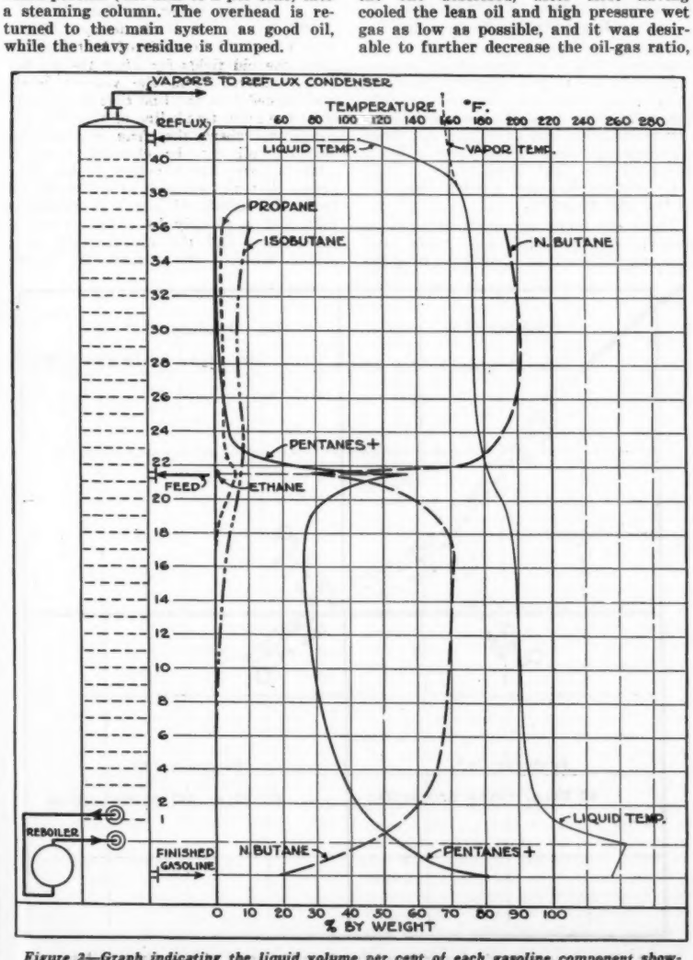


Figure 2—Graph indicating the liquid volume per cent of each gasoline component showing on each tray in the stabilizer. The temperature gradient is also shown.

VARIOUS METHODS USED TO EVADE GAS TAX

(Continued from Page 29)

amounting to hundreds of thousands of dollars annually, a case now pending in the federal district court at Muskogee, in which a bus transportation company is seeking exemption from the tax on grounds alleged to be provided in the interstate commerce regulations, must be decided in favor of the State.

Oklahoma state authorities recently forced one operator in Oklahoma City to pay more than $10,000 in delinquent taxes, following charges that this seller had failed to observe the inspection regulations and had moved large quantities of gasoline secretly, selling the motor fuel without paying the taxes due. These authorities have announced their intention to maintain a closer supervision over places where fraud of this nature is possible.

Exemptions to Farmers

Exemptions granted to farmers, according to state officials, account directly or indirectly for the largest losses to the State through gasoline tax evasion. Figures presented by the state auditor's office show that the quantity of gasoline exempted from tax was 1,671,243 gallons during the first quarter of 1930, while in the first quarter of 1931 the quantity of gasoline exempted from tax rose to 4,366,377 gallons. For 1930, the quantity of gasoline upon which no tax was paid because of supposed use in tractors amounted to 24,182,179 gallons, representing tax exemptions amounting to $967,287.16. Gasoline tax collections for 1930 totaled $11,710,656.

Under the existing laws the auditor's office can do no more than check the farmers' affidavits (which are presented by the oil companies) for signature and correct totals on the quantities of gasoline therein presented as sold to the farmers free of tax. At least two oil companies are on record in the auditor's office as selling every gallon of their comparatively large consignments to farmers for use in tractors or engines. Collections from these companies consisted of huge bales of affidavits.

One of the measures advanced to cope with this situation through legislation provides for a law to be passed making it imperative for each member of the selling transaction to present an invoice on the sale upon demand. These invoices of the refiner, the distributor (transporting agent) and the filling station operator would be available for checking against each other. The farmer would have a duplicate copy of his affidavit and this, on occasion, would be compared with that of the dealer. Appointed police officials would have authority to demand presentation of the invoices and affidavits.

While such legislation may involve additional expense to the State, it is pointed out that the increased tax collections which would follow these restrictions would more than pay for the extra help needed in the auditor's office.

It is pointed out that the farmer need not be suspected of collusion with the dishonest dealer. The farmer is allowed by law to purchase gasoline in quantities of more than 50 gallons without payment of the 5-cent tax upon the farmer's sworn affidavit that the motor fuel is to be used in tractors and stationary engines. There are strong indications that some dealers have tampered with affidavits, raising the quantity really purchased by the farmers considerably. It is significant that while the increase in tax-exempt gasoline in 1930 and 1931 (first quarter) was from 1,671,243 gallons to 4,366,377 gallons, the number of tractors registered in the State increased by only 4,000. A slight increase in acreage cultivated is indicated for the first quarter of 1931 in the reports of farmers' intentions to plant compiled by the Federal Government.

A means of stopping dealers from tampering with affidavits is provided in a bill which has been presented in the legislature. This bill calls for the appointment of 12 police officers whose duties shall be the checking of all affidavits with the farmers. However, bills which have been urged to combat this form of fraud, according to their advocates, have been opposed by the farmers themselves with sufficient strength to make their enactment into law a remote possibility. Development of this opposition on the part of the farmers was not expected by the state authorities and admittedly places them at a loss to account for their position that the farmer is blameless in the matter of wilful tax evasion.

Gov. William H. Murray of Oklahoma places upon a radical minority among the farmers the blame for widespread opposition in the agricultural districts to legislation which is intended to eliminate much of the fraud now connected with gasoline tax exemptions granted to farmers in their purchases of motor fuel for use in tractors and stationary engines. Governor Murray has been active in supporting bills proposed to combat evasion of this levy. The governor is also looking toward strong measures to halt illegal transactions between unscrupulous refiners and tank wagon buyers.

At least 30 oil companies in Oklahoma are paying no tax on gasoline marketed by them. Suits have been filed by the State in 17 counties to recover alleged delinquent taxes due on motor fuel. However, under the existing laws it is possible for a dealer to operate for a month before he may be approached to pay the gasoline tax. He may operate an additional month before he is brought to book; and a third month before it is necessary for him to leave the locality and resume his operations elsewhere under an assumed name.

Further losses are felt by the State from the activities of tank wagon operators who cross the line into Oklahoma from Texas or Kansas and deliver consignments of gasoline. The State of Oklahoma has deputized two officers to patrol the areas of most contraband activity, and a proposed law provides for the appointment of 10 more such officers.

Interstate Commerce

The appeal of a motor bus transportation company against the decision of a lower court is to be heard in the federal district court of Muskogee, Okla., shortly, and this suit will decide upon the State's right to levy a gasoline tax on motor fuel used in public carriers which cross state lines in their route. The Wardway Co., a public carrier, contends in this appeal that the placing of a tax on the gasoline used in their buses is in violation of provisions in the Interstate Commerce Act. The office of the attorney general of Oklahoma holds that the tax is levied to raise funds for improvement and maintenance of roads and that the transportation company, as a user of these highways, is obligated to contribute to these funds.

However, it is said by certain state authorities that the State's case has been weakened considerably by the recent 1-cent increase in the gasoline tax, because the additional cent goes to an unemployment relief fund and for the purchase of seeds. Of the gasoline taxes collected in 1931, $300,000 will go to the relief fund and $300,000 for the seed fund. Another bill has been advanced to provide an additional $300,000 for seeds from the gasoline tax collections.

SOME CRUDE OIL GATHERING PROBLEMS

(Continued from Page 25)

equivalent. If he could supply this 2-inch pipe from his own pipe racks it was satisfactory, or if he could purchase the pipe at prices below the 10-cent base price he was permitted to turn it in for full credit. This practice was followed because 2-inch pipe could be used by the Stanolind Pipe Line Co. in many places and it was quite willing to pay for it at the above price.

It has been found that each district had to be considered separately in so far as the economic plan was concerned but all contracts have been made on the same general basis. An example of the type of agreement reached with the producers in the Alluwe district is representative and is outlined below.

The agreement states that the Stanolind Pipe Line Co. provides for the more prolific central and southern part of this pool by laying a 4-inch and 3-inch artery comprising 12 miles of 4-inch and about 1 mile of 3-inch line to come within a short distance of the distress production of this area.

There was a question of laterals and the Stanolind Pipe Line Co. laid these to the extent of 15 miles of 2-inch line. The producers then stood the expense of 6 additional miles of 2-inch line. If the producers had not moved any of their tanks they would have had to lay more than 6 miles of pipe. They had the option of not laying any pipe if they would move their tanks up to the point at which the Stanolind lateral terminated. The 6 miles of pipe provided by the producers is an economic compromise at which they arrived, some tanks being moved but in other cases the pipe being laid to the old locations, whichever was more satisfactory and the cheaper solution.

This broadly explains the general plan worked out for the Alluwe district and somewhat similar plans were entered into with producers in other areas with such variations as the local conditions made necessary.

Reduced to actual investments the Stanolind Pipe Line Co. has made the major portion of the outlay. For example, in the Alluwe district over seven and one-half times more than the producers, and in other districts the proportions are somewhat similar.

Up to March 25 the pipe line company has received in one district alone nearly 13,000 feet of 2-inch pipe from two producing companies, but during the same period found it necessary to purchase over 25,000 feet additional pipe to meet its obligations assumed when new connections were contracted for to producers.

In this same district the pipe line company's records show that up to March 25 it made connections to tanks that represent about 1,420 bbls. of oil daily received from 25 oil producers and of the 2-inch pipe lines laid over 70 per cent was laid by the pipe line company while producers furnished pipe for only about 30 per cent. In addition to this over 4,000 feet of 3-inch and 64,000 feet of 4-inch line and one booster pump station was provided by the Stanolind Pipe Line Co. for this district.

Example of General Problem

To illustrate how costs are allocated, a sketch has been prepared showing a typical section with four leases located in it and served by a 3-inch line that has been laid by the pipe line company to the corner of the section from where it is necessary for the producers to lay new lines to the individual run tanks on the leases.

If these leases are designated as "A," "B," "C" and "D" and it is assumed that "A" will produce 50 bbls., "B" 20 bbls. and "C" 30 bbls. of oil daily there will be a total of 100 bbls. of oil available to this new extension of the gathering system, all of which will pass through the new 3-inch extension.

In as much as "D" can move his tank up to the terminus of the 3-inch pipe line and connect there, his only expense is that of resetting his tank and running lines from the wells to it, and then providing the line from tank connection to the 3-inch pipe line. The "D" lease owner does not therefore share in the general expense of gathering the 100 bbls. of oil from "A," "B" and "C" leases.

To illustrate the method of allocating costs of laying lines to the other tank batteries the following compilation has been prepared, and the lines and leases marked on the sketch to correspond to the description.

Line No. 1. 2,000 feet of 3-inch:
Producer "A" bears 50% or 1,000 feet.
Producer "B" bears 20% or 400 feet.
Producer "C" bears 30% or 600 feet.
Line No. 2. 1,000 feet of 2-inch:
Producer "A" bears 100% or 1,000 feet.
Line No. 3. 1,000 feet of 2-inch:
Producer "B" bears 40% or 400 feet.
Producer "C" bears 60% or 600 feet.
Line No. 4. 300 feet of 2-inch:
Producer "C" bears 100% or 300 feet.
Line No. 5. 400 feet of 2-inch:
Producer "B" bears 100% or 400 feet.

For each barrel of daily production the producer is credited with 73 feet of 2-inch or 32 feet of 3-inch pipe laid by Stanolind Pipe Line Co.

On this basis 1 foot of 3-inch pipe is equivalent to 2.281 feet of 2-inch pipe.

Lease "A"

Gross cost to Producer "A":		
Line No. 1. 1,000′ of 3″ or	2,281′ of 2″	
Line No. 2.	1,000′ of 2″	
	3,281′	3,281′
Credit to Producer "A":		
50 bbls. prod. at 73′ per bbl.		3,650′
Net cost to Producer "A"		0

Lease "B"

Gross cost to Producer "B":		
Line No. 1. 400′ of 3″ or	912′ of 2″	
Line No. 3.	400′ of 2″	
Line No. 5.	400′ of 2″	
	1,712′	1,712′
Credit to Producer "B":		
20 bbls. prod. at 73′ per bbl.		1,460′
Net cost to Producer "B"		252′

Lease "C"

Gross cost to Producer "C":		
Line No. 1. 600′ of 3″ or	1,369′ of 2″	
Line No. 3.	600′ of 2″	
Line No. 4.	300′ of 2″	
	2,269′	2,269′
Credit to Producer "C":		
30 bbls. prod. at 73′ per bbl.		2,190′
Net cost to Producer "C"		79′

Lease Lines Carefully Planned

When the original gathering lines were laid in these old fields, or for that matter in fields drilled within comparatively recent years, very little attention was paid to the system as a whole. Each well as finished was provided with such tankage as the producer deemed necessary and the pipe lines made connections.

Such methods could only result in gathering systems that were duplicated in many details and the next consideration for the Stanolind Pipe Line Co. engineers after the base price agreement has been made, was to select the best routes to be followed in laying pipe from the existing pipe lines of the Stanolind Pipe Line Co. to the individual leases. This required a careful study of each lease and consideration was given to the contour of the land, surface conditions, relation of the new line to other leases, and numerous other details before decision could be made. After maps had been studied and plans discussed in the office it was necessary that the ground be gone over by the engineers before work was commenced to be certain that topographic conditions or permanent improvements did not interfere with the actual laying of the lines.

In the Tulsa office of the general superintendent there is a large detailed map of the whole area effected which shows the pipe lines already in use or laid and the individual wells to be served, together with the amount of oil to be secured from each lease upon which daily progress is recorded.

Detailed study of this kind is reflected in the saving that can be made in gathering oil as shown by the system now in service in the Big Creek district east of the town of Nowata, Okla.

It is reported that under the old system numerous small power pumps were required to force the oil from the lease to the pipe line but by the rearrangement of tanks and pipe lines all oil is now gathered at one point by gravity and from there pumped by a semiautomatic pump station to the station at Alluwe.

Semiautomatic Pump Station

The Big Creek station is located in the SW cor., Section 18-25n-17e and, as stated, it picks up the oil gathered in the territory to the north of Big Creek and delivered by gravity, and pumps the oil to the company's large pump station at Alluwe, from where it is pumped to Hominy, Okla., and delivered to the main trunk line.

The new station has been running for about one year and has always given excellent satisfaction in addition to lowering handling costs materially.

This pump station is shown in one of the pictures and consists of a motor-driven Gaso pump, 2½″x5″x10″ size, with interchangeable liners for the cylinders, and an electric motor. To prevent flood water from covering the motor it is hung from heavy timbers near the roof of the building, as shown in the accompanying cut, and the drive from motor to pump is by belt.

The motor is started and stopped by an automatic control regulated by a Tork clock, that is set by the field man for the district. There is no station tank at the Big Creek pump station and the oil is handled as fast as it flows to the pump.

When the pump has been started the field man estimates the time needed to handle the oil that will flow to the station during a given period of time and sets the clock to shut off the power when this period has been completed. The next day the clock is again set and pump started to perform the same cycle of operations.

To prevent trouble from air lock there is an automatic air bleeder on the pump. All of the equipment is housed in an 8′x12′ building with concrete floor and machinery foundations. This station is enclosed by a high dyke because the area is often flooded by the water from Big Creek which flows near by.

This installation has been giving such good satisfaction that it is now planned to install a similar station in the field south of Alluwe and perhaps others in districts where the topography of the land is such that the oil can be delivered by gravity to a motor-driven pump.

Lease Storage Tanks

Pictures accompanying this article will give some idea of the type of old wooden tanks common to this district. Many of these tanks have been in service since the wells were finished about 1904 or a few years later, and have been cut down rejointed and reset many times. There are good gas tight steel tanks in this same district but the wooden ones are in the vast majority.

These old tanks are made as tight as possible and provided with roofs, and then the wooden tank sheds built over the battery, but even with all these precautions it is sometimes found necessary to restrap and prepare new tables for them several times a year especially when there is a hot dry summer.

This is in itself a problem and adds to the cost of handling this oil for the pipe line company's engineers are required to gauge these tanks, but in addition to that it has been found that on many leases the tanks were not placed to the best advantage to permit handling the oil by gravity from the tank to the pipe line, and the tanks were not of a size best suited to the particular lease.

It is only natural that the pipe line company desires to use a minimum of gaugers in each district because this labor item has to be distributed over the total number of barrels of oil secured.

This condition requires that the route of each gauger must be carefully laid out and he must make the fewest possible number of trips to each tank battery. Tanks are therefore selected to fit into the whole scheme of gathering in a given area.

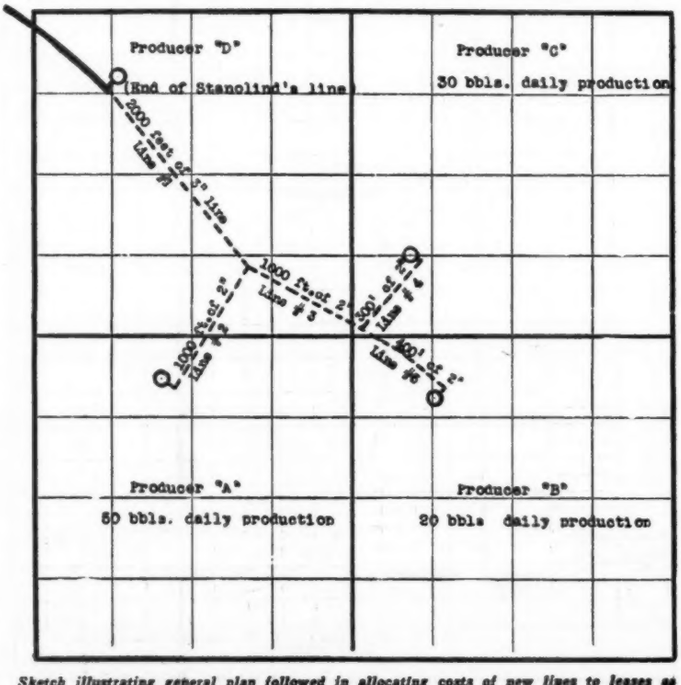
The gauger must measure the amount of oil in the tank that is ready to "go on the line," must take samples of b.s. and water, must account for this material in the tank, and when all this has been done open the stop cocks and permit the oil to flow to the pipe line. He then goes on to the next battery.

After the tank has been drained to the pipe line level the gauger is required to again visit it and gauge the oil and sediment remaining in the tank bottom and then close the stop cock to the pipe line and seal it.

All of this routine work is so planned that the gauger can take care of it on his regular rounds, for to be required to make extra trips to individual leases or tanks for special runs would add to the cost of gathering the oil. For this reason "stub-runs" are being made only when absolutely necessary and the general practice discouraged.

Many Other Problems

This is only one of the many problems that have to be considered in taking oil from the old fields for after the oil has been gathered from the various leases and turned into the line that is to carry it to the main trunk line of the pipe line company, where the first revenue for carrying oil can be charged, there is added expense for handling. It has been found that the expense of gathering oil from the individual leases is relatively high and it is only by consolidation of connections and the working out of a system whereby the gaugers can handle



Sketch illustrating general plan followed in allocating costs of new lines to leases as developed by the Stanolind Pipe Line Co.

a maximum of oil with a minimum of effort that the pipe line company can break even on this part of their operations.

Where there are three or four, or even more, pipe lines competing for a small amount of oil in an old field conditions are such that none of the companies can make any money for the oil could all be handled by one of the companies at a very considerable saving in gathering costs.

There is an old field in Okmulgee County where four of the major pipe line companies have lines laid during the flush production period of this field when they were all needed to handle the total production. Some of these lines actually parallel each other from one portion of the field to another and the gaugers for the different companies will pass over the same route in securing the oil for their respective companies. There are four gaugers working for as many companies covering this field and its total output of oil is about 400 bbls. per day.

If the four companies would get together and allot this oil to one of the pipe lines that could, with small added investment in equipment and lines, handle all of this production it would be a real saving to all concerned. This would naturally entail a readjustment in other fields so that the companies relinquishing their portion of the oil from this particular field could secure a like amount in some other field.

If this could not be done it might become necessary for the oil to be divided after it had been handled by the one remaining company in the field to some central point, but such details could be worked out—the main problem is to eliminate the unnecessary duplication of gathering systems in fields where the total production is so small that any one pipe line could easily and economically handle all of it.

OPERATORS' PROBLEMS IN RECTIFICATION

(Continued from Page 34)

sure exerted by the propane would be 84.8 pounds and the butanes 15.2 pounds. Then dividing the pressure assumed to be exerted by each component by the vapor pressure of that component at the temperature in question should give us the mol. fraction of each component. (Raoult's law) in the liquid (reflux).

$$\text{Propane} \quad \frac{84.8}{192} = .442$$

$$\text{Butanes} \quad \frac{15.2}{65} = \frac{.234}{.676}$$

Since the fractions thus obtained add up to equal less than 1, the pressure assumed was too low. The minimum pressure would then be:

$$100 \times \frac{1}{.676} = 148 \text{ lbs. absolute}$$

The reflux composition would then be:

			Mol. %
Propane	.442 / 676	= .654	65.4
Butanes	.234 / .676	= 346 / 1.000	34.6 / 100.0

148 lbs. abso. or 148—15=133 lbs. gauge

One hundred thirty-three pounds gauge would be the absolute minimum operating pressure at which reflux could be condensed at 110° F. and it would not be advisable to go to so low a pressure for there would be no allowance for change in composition of feed. It is considered good practice to operate at least 10 per cent above this minimum pressure as:

148 lbs. absolute
+ 15 10%
163
— 15
148 lbs. gauge operating pressure

Since we have already assumed an operating pressure of 180 pounds we know that it will be easy to condense reflux and that if the condenser has been designed generously we need not be limited in our choice of reflux ratio.

Another limiting factor to the low pressure at which a rectifier may be operated is the capacity of the column. If a unit is operating at the maximum capacity, it would not be advisable to lower the pressure even though reflux could be condensed since the tendency of the column to carry over would be increased. If there is an excess of butanes in the charge or feed to a rectifier over the amount needed to produce the desired product, the tops and consequently the reflux will contain a large amount of butane and therefore the unit can be operated at a much lower pressure, other conditions being the same, than if practically all the butanes were required in the product.

Maximum Operating Pressure

The maximum pressure at which a column can be operated besides being governed by the working pressure of the equipment is largely determined by the temperature obtainable in the reboiler. If the steam available is at comparatively high pressure, consequently high temperature, it is possible to operate a rectifier unit at much higher pressure than if the steam pressure is low. The pressure at which a unit may be operated is dependent also on the relation between the reboiler heating surface and its load. The load, of course, is governed by the volume of charge, percentage overhead, and reflux ratio. It is not generally considered economically feasible to approach the steam temperature closer than 15 to 20°.

The necessity of constant operating conditions cannot be too strongly stressed. It is obvious, why it is necessary to maintain constant temperature and pressure on the reboiler. The rate of feed and reflux should also be kept very constant as any change in these rates temporarily upsets the equilibrium throughout the system and close fractionation cannot be obtained until after the new rates have been in existence for some time.

For this reason adequate surge tanks should be used between the absorption plant and the rectifying unit. The average plant should have surge tank or "wild gasoline" storage capacity for at least eight hours' production.

Another condition that is apt to influence the quality of the product is a change in the composition of the feed. There are a number of reasons why this condition might change, such as: A change in oil circulation, a change in the gas volume to the plant, a change in the still or absorber pressure, etc. It should be assumed by the operators that when any great change takes place in the operation of the absorption plant that a change has been made in the composition of the rectifier charge and consequently the operation of the rectifier should be carefully watched when this changed product begins to enter the unit.

Let us assume that a rectifying unit is operating in conjunction with an absorption plant, and, for some reason, the operating conditions change, such as, the amount of water to the gasoline condenser is reduced and less of the lighter ends are condensed. The product from the absorption plant would then be of much heavier composition than formerly and it might not contain enough butane to make the vapor pressure of the product equivalent to the column pressure at the reboiler temperature. The rectifier kettle temperature would remain the same but the product from the rectifier would be entirely different and where, before this change in the operation of the absorption plant took place the product was meeting the desired specifications, it might not meet these specifications at all after the change. Any such change as this would be evidenced by reduction in the top temperature of the rectifier column due to the scarcity of butanes at that point and an increase of the reboiler temperature should be made in order to make a propane-free product.

Of course, it is not feasible for the plant operators at all plants to have available methods for making fundamental analyses of the various compositions with which they deal. A very convenient method of interpreting the A.S.T.M. distillation in terms of actual composition is that worked out by G. G. Oberfell published in The Oil and Gas Journal of May 19, 1929. The A.S.T.M. distillation has no definite connection with composition, nevertheless, for particular type of gasoline such as natural gasoline this method is satisfactory. This cannot, of course, be applied to determine the composition of the reflux, but can be applied satisfactorily to determine the composition of the feed and final product. The top temperature of the column, coupled with operating pressure is a very good indication of the composition of the reflux.

Below is a tabulation based on a hypothetical case showing the composition produced by a rectifier operating properly and delivering a product of 25,000 gallons a day of gasoline, composed of 65 per cent pentanes and heavier and 35 per cent butanes, propane-free.

COMPOSITION OF PRODUCTS UNDER FAVORABLE CONDITIONS

	Butanes	Pentanes	Total gasoline
Gals. per day	8,750	16,250	25,000
Liquid vol. %	35	65	100
Sp. gr. at 60° F.	.58	.685	
Composition mol. %	43.1	56.9	100
V.P. at 270° F. (lbs.)	360	70	
P.P.	155	40	195
V.P. at 100° F.	55	4	
P.P.	23.7	2.3	26.0

From the percentage composition and the specific gravities of the components the gravity of the product is calculated as 87°. The sum of the partial pressures under operation is shown as 195 and the gauge is 180 pounds, allowing for atmospheric pressure.

Assuming the same pressure and reboiler temperature but faulty operation due to some factor such as insufficient reflux, fluctuating rates, faulty controls, or shortage of butanes in the feed 1 per cent propane by liquid volume is retained. On the assumption that all the pentanes and heavier are still retained in the product with this 1 per cent propane added another tabulation is made showing the composition and characteristics of the product.

COMPOSITION OF PRODUCTS UNDER FAULTY CONDITIONS

	Propane	Butanes	Pentanes	Total gasoline
Gal. per day	244	7,906	16,250	24,400
Liquid vol. %	1.0	32.4	66.6	100
Sp. gr. 60° F.	.515	.580	.685	
Compo. mol. %	1.5	40.0	58.5	100
V.P. 270° F.	700	360	70	
P.P. 270° F.	10	144	41	195
V.P. 100° F.	175	55	4	
P.P. 100° F.	2.6	22.6	2.4	27.0

From the percentage composition and the specific gravities of the components the gravity of the product is shown as 86.5°, and the gauge pressure 180 pounds, the same as the example above.

In the first case the product would meet the AA specifications being well over 90 recovery and under 88 gravity and would also meet the new specifications for vapor pressure at 100°. In the second case, the final quantity is reduced due to the small percentage of propane equaling in vapor pressure a larger percentage of butane. The A.P.I. gravity is o.k. but the recovery would more than likely be below 90, for the 1½ mol. per cent propane would not condense in the A.S.T.M. distillation apparatus due to its boiling point being quite low (approximately —44° F.). In leaving the distillation apparatus, this propane would carry over a considerable quantity of the other fractions much more than offsetting any tendency to hold the propane in solution. While the second product equals the first product in vapor pressure at the reboiler temperature (270°) its vapor pressure at 100° is higher, therefore it would not meet the new 26-pound vapor pressure specifications. Assuming the difference in selling price of the two products as one-quarter cent per gallon and disregarding the difference in losses in transfer, the gross revenue from the two products are tabulated as follows:

(1) 25,000 G.P.D. at 4c gal.	$1,000
(2) 24,400 G.P.D. at 3¾c gal.	915
Loss/day	$ 85

(1) Correct operation; (2) faulty operation.

Constant operating conditions throughout cannot be obtained without sufficient control instruments. No part of the control of the rectifier unit should be attempted by manual control as poor results are certain to follow. The minimum amount of automatic controls for efficient operation would consist of:

Reboiler temperature controller.
A sensitive back pressure regulator.
Feed flow controller.
Reflux flow controller.

The system should also be equipped with a recording thermometer for the temperature at the top of the column.

Let us assume that a rectifying unit has been placed in operation and that sufficient reflux has been built up so that we are making as close a cut as possible but that we are doubtful if we are recovering all the available gasoline. Our product is meeting the gravity specifications for the grade which we are striving to make and the recovery is considerably over the required amount. From appearances it would seem that we could include more butane in the product and still be within the specifications. Without an analysis of the feed we do not know whether or not that butane is available. Our top temperature has been constant, indicating that the quality of the feed has been constant. An examination of the top temperature will be a fair indication of whether or not more butanes are available for the finished product. By referring to a vapor pressure chart we obtain the temperature at which the vapor pressure of propane is equivalent to the column pressure. If the top temperature of the column exceeds very greatly this temperature obtained from the chart, it is certain that fractions heavier than propane are passing overhead and that we may increase the production by retaining some of these fractions in the product. This may be done by either increasing the operating pressure or decreasing the kettle temperature. In general, it is customary to operate with constant pressure and make temperature adjustments. These adjustments should be made in very small degrees and results watched carefully. Only one adjustment in the entire system should be made at a time. This adjustment should be allowed to remain for an hour or so and the results checked carefully.

Above everything constant adjusting of the controls should be avoided and when the correct adjustment is once obtained it should not be changed without very good reason.

Let us assume, as before, that the unit has been in operation for sometime and that equilibrium throughout has been established but that the product does not meet the specifications as to recovery. It would then appear that propane is being retained and an inspection of top temperature during normal operation will more than likely reveal that nothing heavier than propane is going overhead. This would indicate that there is a shortage of butanes and in order to make a stable gasoline it will be necessary to more than meet the specifications for recovery and gravity, in other words, our product to be propane free must contain a higher percentage of the pentanes and heavier portion than would be necessary to meet the specifications. We then must make adjustment so that no propane will be retained in the product and that we may retain the maximum amount of butanes. This requires very constant operation, careful adjustments and a large reflux ratio. Our top temperature would be just above the temperature of propane when the vapor pressure would equal the column pressure and the reboiler of course would have to operate at a higher temperature or lower pressure than previously.

END OF SEEP AGENCY RECALLS LIVELY DAYS

(Continued from Page 29)

major uncertainties of transportation. After awhile the pipe line companies introduced a plan by which any loss on oil in storage was covered by an assessment on all holders. Another step in the evolution of pipe line practice was the issuance of a pipe line certificate for each thousand barrels of oil put into storage. The producer of the oil could accept a certificate instead of cash and could sell this certificate on the oil exchange or to the purchasing agency. Oil was held free of charge in pipe line tanks for 30 days, after which a monthly storage fee of 25/1,000 of a cent a barrel was imposed. This was equivalent to 25 cents a month on a 1,000-bbl. certificate.

Ready Medium for Speculation

So it came about that these storage certificates issued by the United Pipe Line Co. offered a convenient medium for speculation. Deliveries of the actual oil on exchange contracts were replaced by deliveries of the certificates instead. The Oil City exchange was the center of the gambling in oil because its quotations were recognized as official at the pipe line field offices, but exchanges were established also in Bradford, Parkers Landing, New York, Pittsburgh and later in other cities. During the period of buying and selling futures the oil exchange established in Parkers Landing, Pa., had been the place where the market was made. As producing operations shifted to the brown sand fields most of the Parkers Landing traders moved to Oil City and Bradford.

Gambling in oil certificates reached its height in 1882 to 1884. Millions of barrels of oil, represented by slips of paper, changed hands daily about the "bull-ring" of the Oil City exchange and there was almost as extensive trading in the other exchanges. A gusher well could break the market. A wildcat dry hole or reports of salt water appearing in a pool could start a boom. The galleries of the exchange were packed with excited spectators watching the milling brokers around the bull ring. Many of them were dabbling in the market themselves. Just off the trading floor, and separated from it by a counter provided with paper and pencils, was the "sheep pen," where speculators went to be in close contact with their brokers. Messenger boys ran back and forth between the sheep pen and bull ring.

Among the speculators were men who were neglecting more commonplace, but surer, ways of making a living, and women who had forgotten household tasks —all caught by the speculative mania, the chimera of easy money.

Some of course did make easy money. Most of them went back to make more, only to lose it all. One young man residing in Warren, Pa., bought oil certificates on margin of $500. The price of oil rose and he doubled his purchases as it went up. He cleaned up $50,000. He was considering what to invest in, when he believed the market looked good again. He sought to double his $50,000 only to see it all swept away in a day. An Oil City producer made $300,000 in the oil market in a few months, bought for a further rise and then lost everything in the panic which the opening of the Cherry Grove, Pa., Field started. Oil workers, bank cashiers, lawyers, machinists, doctors, school-teachers, farmers, servant girls—all kinds of folk—yielded to the craze, usually with disastrous results.

There Was a Brighter Side

All the recollections of that frenzied era are not sad. For instance, there is the case of Peter Swenk of Ithaca, N. Y., who in 1876 bought 10,000 bbls. of oil at $2 through a Parkers Landing broker, with directions to buy 5,000 more if the price should go down to $1.75. After he had returned to his home the market took a sudden drop of 40 cents, 5 cents below the margin which he had put up. Telegraph lines were crippled by a storm, with the result that Swenk was unable to get any reports except from Oil City, where the break was 8 cents more than at Parkers Landing. The storm actually saved him for in the last hour or so of business that afternoon telegraph lines between Oil City and Parkers Landing went down, shutting off communication. Assuming that his margin had been exhausted and that his broker had sold him out to save himself, Swenk left Ithaca and went west to start life over again.

Months afterward telegrams for Swenk from the Parkers Landing broker were received in Ithaca and they were forwarded to him. These telegrams informed him that as the market stood his holdings were worth $19,000 and it would be advisable for him to sell. Swenk wired a selling order and started for Parkers Landing. The market made another jump before the broker received the selling order and Swenk cleared up $22,000, which he invested in a farm. But even this cheery story has its tinge of sadness. The broker who handled this unusual transaction to such profit for his client became a drunkard and a pauper, begging dimes in the street to buy drinks.

Col. A. K. McClure, veteran newspaper editor of the Philadelphia Times, visited the Pennsylvania oil fields in 1883 and wrote: "Oil is just now on a boom. Everybody talks oil, and the visitor must talk oil or endure the unconcealed pity of all around him. Oil struck somewhere about $1.12 on Tuesday. They sold oil by the million of barrels, without a speck in sight and with only a small percentage of margin money to give substance to the hazard. Five million barrels, and even more, are sold in a day, and speculators make one day, to lose the next."

Cherry Grove Stirred Gambling Frenzy

The speculative frenzy of 1882-84 centered mainly about the white sand gusher district of Warren County, where in May, 1882, the famous 646 well in Cherry Grove Township started a new development that within four months had a production of 40,000 bbls. a day. The price of oil dropped steadily. By July 6 of that year it was down to 49¼ cents a barrel. Much of the decline resulted from owners and speculators selling short in expectation of a further rise in the output of the field. Then salt water entered the wells and ruined them. The 646 discovery, which in June was producing 2,500 bbls. a day, was yielding five-eighths of a barrel in December, and its decline was typical of what was taking place in the field.

The Oil City Derrick of September 18, 1882, said: "A rapid and steady decline is noted in Cherry Grove and more of the wells quit daily. A short time since the trade held up its hands in astonishment at transactions aggregating 4,000,000 bbls. for one day, but now we place the result of this monster of days at the enormous total of 12,731,000 bbls. When we consider that this one exchange has turned over in one day more than one-third the entire stocks aboveground we begin to realize the magnitude of the petroleum business."

In his "Romance of American Petroleum and Gas," A. R. Crum describes one November day in 1882 when hundreds decided simultaneously that the time had come to sell their oil and take their profits: "Nerves were strung tense and nerves were totally unstrung before the gongs sounded at the stroke of 10. There was a rush to sell and hardly anyone to buy. In five minutes there was a panic. Brokers went white in the face and speechless. Other brokers went mad and vociferated with all the power of their lungs. If by chance one bid to buy he was seized by many hands and dragged until it could be decided who had been lucky enough to sell. Men's coats were torn from their backs, collars were thrown upon the floor, hands and limbs were bruised in the eager grasp to attract attention, but no one heeded. Men even spat in each other's faces in their excitement and none had time to resent the indignity. Pandemonium continued until the gongs rang at 3 o'clock."

Boys Will Be Boys

Members of the exchange as a class, living as they did in an atmosphere of excitement, unreality and fickle change, were a fun-loving, frolicsome lot, averse to taking life seriously and always ready to take or perpetrate a joke. A favorite prank, especially on days when the market was slow, was one played on some stranger who appeared on the floor wearing a "plug" hat, as the decorous silk headgear was called. The visitor commonly entered as a guest of some member of the exchange, just "to be shown around." He probably had been introduced to a few men here and there when suddenly his treasured hat was snatched from his head and an instant later he was horrified at seeing a whirling, yelling mob of oil brokers kicking a topper around the room, jumping on it, tossing it from one to another, subjecting it to all sorts of indignities until it bore not the remotest resemblance to the thing of elegance and grace it once had been.

The victim of the outrage, speechless from shock and anger for a few harrowing moments, usually found his voice and gave vent to his wrath in blistering maledictions. Sometimes, overcome by a sense of his humiliation and the wantonness of the insult, he proclaimed his readiness to lick anybody willing to fight. At this point one of the conspirators would appear in front of him and with a smile and polite bow hand him his hat, undamaged and as shiny and magnificent as it had been before it was whisked from his head. Again he was inarticulate. Then as the truth broke upon him he grinned and quite often invited the crowd to go out and "have one on him." The battered headpiece which had been flung about and smashed with such abandon was one of a number of out-of-date "plugs" kept for this special purpose and brought out as required.

They were generous, too, these old-time oil brokers, ready instantly to pass the hat to help a fellow being in need or to give in a big way if the occasion arose. One day in September, 1878, an Italian vender gave a pint of peanuts to a member of the Parkers Landing exchange with the request that they be auctioned off for the benefit of yellow fever sufferers in the South. James F. Hughes acted as auctioneer and $232.80 was realized in a few minutes. Two peanuts sold for $15 each.

Beginning of the End

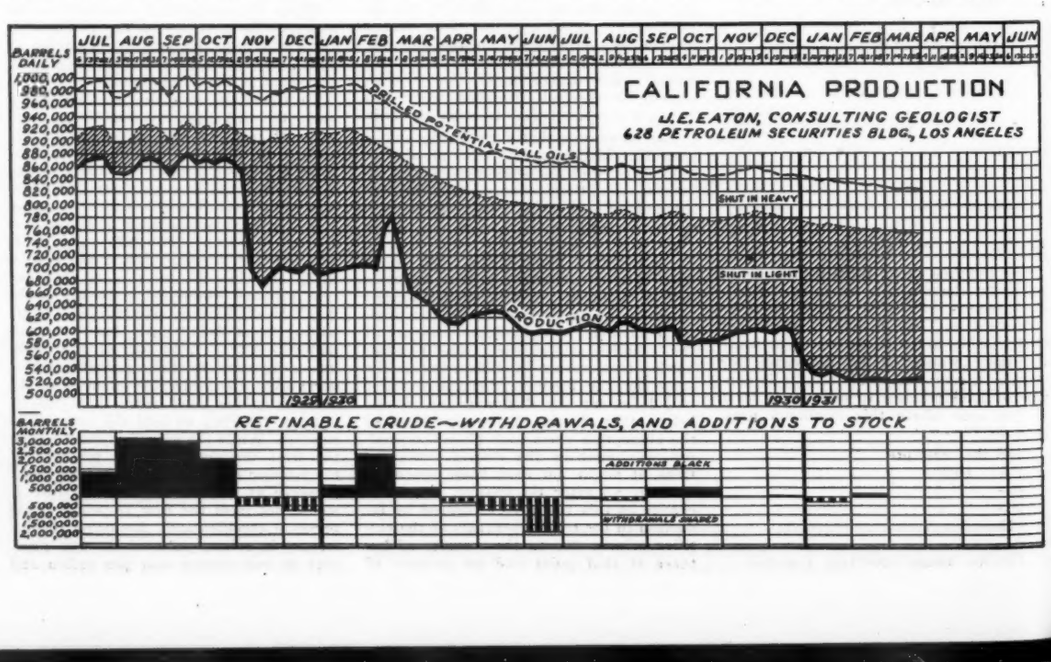
Declines in fields producing Pennsylvania high-grade oil and the advent of the less desirable grades of Lima oil resulted in decreased business in the exchanges dealing in Pennsylvania Grade crude oil and many of the speculators turned their attention to Lima oil. In 1890 exchanges were opened in Lima and Findlay, Ohio. For a time efforts were made to trade in certificates for the Lima oil in the Oil City, Bradford and Pittsburgh exchanges, but the results were not satisfactory. The Lima exchange soon went out of business. The increased number of grades of petroleum caused further decline in the business and prestige of the various exchanges. It was demonstrated, too, that certificates could be cornered. What was virtually the end of the oil exchanges as going concerns came on January 22, 1895, when Joseph Seep issued the following statement:

"The small amount of dealing in certificates on the exchange renders the transaction there no longer a reliable indication of the value of the product. This necessitates a change in my custom of buying credit balances. Hereafter in all such purchases the price paid will be as high as the markets of the world will justify but will not necessarily be the price bid on the exchange for certificate oil. Daily quotations will be furnished you from this office."

The Oil City exchange, which owned the excellent building already referred to and shown in the illustration, sold it to the Oil City National Bank in 1909 and went out of business. The Bradford Oil Exchange Building is now owned by the First National Bank & Trust Co. and the oil exchange part of it has been a moving picture theater for nearly 20 years after having served as a public assembly hall for years following its close as a place of trading in oil.

ALCOHOL AS FUEL

The Argentine National Chemical Office has submitted a report certifying the feasibility of introducing a national fuel composed of 90 per cent gasoline and 10 per cent pure alcohol, the latter to be obtained from agricultural products.


CALIFORNIA PRODUCTION
J.E. EATON, CONSULTING GEOLOGIST
628 PETROLEUM SECURITIES BLDG., LOS ANGELES
JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN
BARRELS DAILY
DRILLED POTENTIAL—ALL OILS
SHUT IN HEAVY
SHUT IN LIGHT
PRODUCTION
1929/1930
1930/1931
REFINABLE CRUDE—WITHDRAWALS, AND ADDITIONS TO STOCK
BARRELS MONTHLY
ADDITIONS BLACK
WITHDRAWALS SHADED

RICHFIELD MERGER AWAITS FINAL AUDIT

(Continued from Page 124)

and subsidiaries for year ended December 31, 1930, shows profit of $602,796 after interest, depletion and depreciation. This compares with profit of $518,928 in 1929. Capital stock amounts to 428,967 no-par shares.

Mountain & Gulf Oil

Profit of Mountain & Gulf Oil Co. for year ended December 31, 1930, was $234,053, after expenses but before depreciation, depletion, etc.

New Bradford Oil

Profit of New Bradford Oil Co. for year ended December 31, 1930, was $651,803 after expenses and minority interest but before depreciation, depletion, etc.

Atlantic Refining

Atlantic Refining Co., Inc., New York subsidiary of the Atlantic Refining Co. of Pennsylvania, has increased its capitalization from $500,000 to $2,500,000, according to a certificate filed by the company with the Secretary of State at Albany.

Standard of Ohio

Report of Standard Oil Co. of Ohio for year ended December 31, 1930, shows net profit of $3,724,325 after depreciation, federal taxes, etc., equivalent after dividends paid on preferred stocks to $5.55 a share (par $25) on 560,720 shares of common stock. This compares with $4,202,384, or $6.62 a share, on 560,000 common shares in 1929.

Deep Rock Oil

Deep Rock Oil Corp. omitted the quarterly dividend of $1.75 on the preferred stock due at this time.

Statement to stockholders explained that in view of the unsettled conditions in the oil industry last year, which had a serious effect on the company's earnings, and present lack of indications of an immediate recovery, directors felt that it would be for the best interest of the stockholders if the preferred dividend were passed at this time in order to preserve cash.

Panhandle Producing & Refining

Report of Panhandle Producing & Refining Co. and subsidiaries for year ended December 31, 1930, shows net loss of $449,401 after taxes, intangible development costs, depletion, depreciation, interest, etc. This compares with net profit in 1929 of $151,619, equivalent to $6.61 a share on 22,932 shares of 8 per cent cumulative preferred stock outstanding at end of year.

South Penn Oil

Report of South Penn Oil Co. for year ended December 31, 1930, shows net profit of $1,378,072 after depreciation, depletion, taxes, etc., equivalent to $1.15 a share (par $25) on 1,200,000 shares of capital stock. This compares with $5,139,296 or $4.28 a share in 1929.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Aug. 13	43.53	Dec. 10	28.57
Aug. 20	43.79	Dec. 17	25.42
Aug. 27	42.83	Dec. 24	25.68
Sept. 3	42.71	Dec. 31	26.15
Sept. 10	42.84	Jan. 7	27.56
Sept. 17	42.43	Jan. 14	27.31
Sept. 24	40.62	Jan. 21	27.55
Oct. 1	37.78	Jan. 28	27.26
Oct. 8	35.85	Feb. 4	27.26
Oct. 15	35.21	Feb. 11	28.76
Oct. 22	31.88	Feb. 18	28.53
Oct. 29	32.80	Feb. 25	29.33
Nov. 5	31.77	Mar. 4	27.67
Nov. 12	30.18	Mar. 11	26.53
Nov. 19	31.54	Mar. 18	26.78
Nov. 26	30.86	Mar. 25	26.35
Dec. 3	30.53	Apr. 1	24.80

LARGE ORDER PLACED FOR OKLAHOMA GASOLINE

(Continued from Page 24)

do reflect a bad condition in the wholesale and retail markets generally which will require several months of strong market conditions to remedy. The situation is the result of conditions last year in which wide spreads between the delivered tank car and tank wagon markets were permitted to prevail. This has enabled the price cutter selling from 2 to 5 cents a gallon under the regular prices, to get a firm foothold with large gallonage.

Statistical Situation

Although the general attitude in the marketing branch of the industry is to consider nothing but the unfavorable developments statistical data continue to point to improved conditions. The Bureau of Mines report covering February operations which was released during the past week shows that the crude oil stocks of 503,980,000 bbls. on February 28 were 35,356,000 bbls. less than on the same date last year. Stocks of refined products have also declined so that the reductions in crude oil and refined stocks for the year ending February 28 were 41,092,000 bbls.

Gasoline stocks at refineries on the last day of February totaled 45,355,000 bbls., a decrease of 7,874,000 bbls., or 17.3 per cent for the year. Exports of gasoline declined 12.2 per cent the first two months of this year when compared with the same period in 1930 but the domestic demand increased 1.4 per cent so that the total decrease in demand was slightly less than 2 per cent. The domestic production for the two-month period decreased 10.2 per cent with practically the same imports.

The domestic and export demand for kerosene decreased 28 per cent the first two months of this year compared to January and February, 1930. However, there has been a corresponding decrease in output so that on February 28, kerosene stocks were 2,088,000 bbls., or 24 per cent less than they were on February 28, 1930.

Comparable data on fuel oil and gas oil are not available from government reports but the latest report of the American Petroleum Institute shows that stocks on March 28 were approximately 7,000,000 bbls. less than on the same date last year. Among the minor products, the situation is far from hopeless. Manufacturers of wax who have had a weak market for over two years have at last got their output in line with the demand. The domestic production plus imports the first two months of this year totaled 86,880,000 pounds, while the domestic demand plus exports totaled 90,048,000 pounds, resulting in a decrease in stocks.

While the export demand for lubricating oils decreased 30 per cent the first two months, the domestic demand increased 15 per cent so that the total demand for the two months of the two years is practically the same. Production decreased 20 per cent.

These data point to an equilibrium between supply and demand in refined products which should in the near future be reflected in refined markets.

Gasoline and Naphtha

Some of the orders for high gravity gasolines placed during the past week have brought slight reductions in the general price levels. Refiners with 400 endpoint or even 390 endpoint gasoline to sell are usually not asking more than one-eighth cent above the U. S. Motor price. The 5,000,000-gallon order for 60-62 400 endpoint previously referred to is understood to have brought an average of less than 3½ cents. However, most refiners are quoting a low of 3⅝ cents on this grade with a high of 4 cents.

The 390 grade is quoted at a low of 3¾ cents, 375 at 3⅞ cents and 360 or 350, 4 cents. The movement of these higher gravities is very slow. There has been little change in the U. S. Motor situation. The general price range is 3½ to 4 cents. Sales are being made under 3½ cents but in many cases this material has a low antiknock value. Naphtha prices are fractionally lower.

Kerosene

The kerosene movement is routine. Little spot business is available and supplies adequate. Price ranges are the same as last week.

Fuels

Those who keep in close touch with the fuel oil situation state that new business is as dull as it has ever been in Oklahoma. The contract movement is fair but spot orders apparently are being placed in competitive refining areas. There is practically no demand for the high gravity, high cold test grades. Offers of 26 to 30 gravity fuel oil from Oklahoma City crude oil at 30 cents are reported. However most refiners are quoting a low of 35 cents for their low gravity fuel oils and prices range up to 65 cents for the high gravity low cold test grades. Furnace oils are lower with little demand. Sales of 36-38 at 2 cents have been made with most refiners quoting a low of 2⅛ cents. Prime white distillates with gravities as high as 40 have sold at a price range of 2¼ to 2½ cents.

Gas oil price ranges are unchanged.

Natural Gasolines

Natural gasolines furnish the best example of the ridiculously low price levels of the refined market. The best grade sold at 2¼ cents the first of week with sales of other grades as low as 1¾ cents. One manufacturer has suggested that the trade start quoting on a barrel basis instead of a gallon the present price levels being comparable to those prevailing for fuel oil under normal conditions.

Manufacturers believe that the lack of export business is largely responsible for present conditions. They continue hopeful that substantial improvement will get under way after the middle of the month. Trading the first of the week was dull.

Lubricants

The low market for fuel oils is reflected in the steam refined market. In an effort to get rid of fuel oil, some refiners have increased their output of this stock. This applies to refining areas both within and outside the Mid-Continent. Sales of 600 steam refined stock are being made by small manufacturers as low as 2¼ cents a gallon. This low priced stock would not meet specifications of many buyers but it apparently is satisfactory to several domestic and export purchasers. The older established manufacturers are generally asking a low of 3½ cents. Prices range up to 6 cents with treated stocks higher.

The bright stock market reflects this weakness in the steam refined stocks. Price ranges are unchanged. Neutral oils are moving satisfactorily on contracts but the spot demand is slow. Wax prices are unchanged.

MID-CONTINENT CRUDE RUNS TO BE INCREASED

(Continued from Page 28)

April schedule of crude runs but the total for the State is only 1,250 bbls. above that of March. The status of the operating and shutdown plants remains unchanged.

Kansas

Kansas refiners will run 6,400 bbls. more crude in April than in March, due to general increases of a small amount in a number of plants and due to the Shell Petroleum Corp. increasing its runs in the Arkansas City plant to 14,000 bbls. per day. There are no changes in the balance of the operations.

REFINERY OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
Bayou State Refining Co., Hosston	750	500	500
Crystal Oil Refining Co., Shreveport	14,000	(*)	(*)
D'Artois Oil Refining Co.	50	25	25
Louisiana Oil Refining Co., Shreveport, Bossier	19,000	18,000	17,650
Shreveport-El Dorado Pipe Line Co., Shreveport	10,000	8,000	7,100
Stanolind Oil & Gas Co., Superior	3,500	2,800	2,800
The Texas Company, Shreveport	7,000	(*)	(*)
Total	54,300	29,325	28,075

*Shut down.

REFINERY OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
James H. Berry & Sons, Waterloo	2,000	1,000	1,200
Henry H. Cross Co., Smackover	6,000	4,000	4,000
Houston Oil Co., Camden	6,000	2,750	(*)
Kettle Creek Refining Co., Pearson	5,000	2,000	1,550
Lion Oil & Refining Co., El Dorado	12,000	6,700	6,000
Macmillan Petroleum Products Co., Norphlet	1,800	1,430	1,600
Ouachita Valley Refining Co., El Dorado	2,000	700	1,000
Root Refining Co., El Dorado	10,000	6,500	5,650
Simms Oil Co., Smackover	3,000	2,750	(*)
Union Asphalt Co., El Dorado†	.....	.....	.....
Total	47,800	27,830	21,000

*Shut down. †Reduces residuum purchased from Lion Oil & Refining Co. to asphalt. No crude run.

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs Apr. 1	Runs Mar. 1
Allstate Refining Co., Thrall	3,000	1,700	2,200
American Refining Properties, Wichita Falls	6,000	3,500	3,000
Archer Refining Co., Megargel	1,500	600	600
Beacon Oil & Refining Co., Friar Switch	2,500	600	.....
Central Texas Refining Co., Angus	4,000	600	(*)
Continental Oil Co., Wichita Falls	6,000	3,300	3,000
Dale Oil & Refining Co., Electra	4,000	2,342	3,124
Deer Oil Corp., Brownwood	2,000	(*)	(*)
Dixon Creek Oil & Refining Co., Kings Mill	3,500	3,000	3,200
East Texas Refining Co., Henderson	6,000	2,000	.....
Empire Oil & Refining Co., Gainesville	5,000	3,600	3,600
Falls Refining Co., Wichita Falls	2,000	800	800
Gulf Refining Co., Fort Worth	10,000	5,633	6,000
Humble Oil & Refining Co., Breckenridge	2,000	600	350
Humble Oil & Refining Co., Chilton	4,000	1,000	800
Humble Oil & Refining Co., Boggy Creek	5,000	1,000	1,000
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,500	1,500
Kent Refining Co., Minerva	2,000	634	600
LaSalle Petroleum Co., Burkburnett (Noble)	3,500	1,500	(*)
Macmillan Petroleum Co., Isom	8,000	6,000	6,000
Magnolia Petroleum Co., Fort Worth	12,000	4,500	4,600
Magnolia Petroleum Co. (White Eagle plant), Fort Worth	6,000	4,000	3,000
Magnolia Petroleum Co., Corsicana	5,000	4,600	4,600
Marathon Oil Co., Fort Worth	5,000	3,500	3,500
Muenster Refining Co., Muenster	300	(*)	25
Olney Oil & Refining Co., Olney	2,500	2,000	2,000
Oriental Oil Co., Dallas	5,000	1,000	500
Atlantic, Pacific & Gulf Refining Co., Wichita Falls	5,000	5,000	(*)
Panhandle Refining Co., Wichita Falls	5,000	3,835	3,400
Petroleum Refractionating Co., Pampa	5,000	5,250	5,250
Phillips Petroleum Co., Isom	15,000	10,000	7,300
Primrose Refining Co., Wichita Falls	2,500	2,000	2,000
Simms Oil Co., West Dallas	4,500	4,000	4,000
Southland Refining Co., Olney	1,000	200	200
Star Refining & Producing Co., Fort Worth	1,500	750	500
Superior Refining Co., Tiffin	2,000	200	200
Tarrant Petroleum Co., Grand Prairie	2,500	(*)	(*)
Taylor Refining Co., Taylor	6,000	3,300	3,500
Taxman Refining Co., Wichita Falls	2,500	1,500	1,500
The Texas Company, Dallas	16,000	15,000	15,000
The Texas Company, Amarillo	4,000	3,000	3,000
Tidal Western Refining Co., Burkburnett	3,000	1,200	1,500
Texas Pacific Coal & Oil Co., Fort Worth	3,000	1,800	2,000
Texas Pacific Coal & Oil Co., Caddo	1,000	450	500
Waggoner Refining Co., Electra	3,400	1,700	1,500
Wilcox Oil & Gas Co. (Pampa Refining Co.), Pampa	4,000	2,000	2,700
Total	203,450	120,694	101,049

*Shut down.

GENE MARLOW GOES TO SINCLAIR OIL & GAS CO.

Eugene B. Marlow, formerly vice president of Stanolind Crude Oil Purchasing Co., resigned effective April 1 and became connected with Sinclair Oil & Gas Co. in charge of crude oil purchases and sales for Sinclair companies.

In this position Mr. Marlow will be associated with H. L. Phillips, president

Gene Marlow

of Sinclair Oil & Gas Co., with headquarters in Tulsa.

Mr. Marlow was vice president of Sinclair Crude Oil Purchasing Co. prior to Sinclair Consolidated Oil Corp.'s sale of its one-half interest to Standard Oil Co. (Indiana) in September, 1930. He was employed by Sinclair Oil & Gas Co. in April, 1920, and served first as a scout in the Tulsa district and then spent a year and a half as a scout at Ardmore, Okla., and was later transferred to Mexia, Tex., at the time the Standard Oil Co. (Indiana) purchased one-half interest in Sinclair Pipe Line Co. and organized Sinclair Crude Oil Purchasing Co. in February, 1921. He returned to Tulsa in 1923 when George H. Taber, Jr., then president of Sinclair Crude Oil Purchasing Co., moved to New York City as vice president of Sinclair Refining Co. and H. L. Phillips was named president of Sinclair Crude Oil Purchasing Co. with Mr. Marlow as vice president.

ECONOMIC COMMITTEE PRESENTS ITS REPORT

(Continued from Page 36)

resents an average daily requirement during the period of 2,521,500 bbls. In its completed report the committee will direct attention to its estimate that the average daily requirement will not be reached during the first three months of the period, since it is indicated that the domestic crude oil requirements, on a monthly basis, will show the following daily averages: April, 2,408,800; May, 2,450,400; June, 2,481,200; July, 2,569,800; August, 2,617,100, and September, 2,599,200.

"After a careful analysis of present trends in the distribution of crude oil from domestic sources, the committee has prepared the following table, showing the relative portions of the national requirements which would be contributed by the several major producing areas during the period:

"Estimated crude oil requirements April 1-September 30, 1931, follow: Texas, 162,641,000 bbls., or 35.25 per cent; Oklahoma, 113,340,000 bbls., or 24.56 per cent; California, 96,624,000 bbls., or 20.94 per cent; all others, 88,829,000 bbls., or 19.25 per cent.

"During the period from September 30, 1930, to February 28, 1931, the last date for which complete data are available, stocks of crude oil held in the field and by pipe line companies were reduced from 475,223,000 bbls. to 461,953,000 bbls., a decline of 13,270,000 bbls., or at the daily rate of 87,881 bbls. If the same average rate of decline should continue throughout the period under consideration, field and pipe line stocks of domestic crude oil would be further reduced by 16,082,000 bbls. If a similar quantity of domestic crude oil should be withdrawn from storage during the 1931 period, the crude oil requirements to be met from domestic production would amount to 445,352,000 bbls., the difference between the total domestic crude oil requirement of 461,434,000 bbls. and the stock withdrawal of 16,082,000 bbls. Domestic crude oil production, amounting to 445,352,000 bbls. during the period, would be at an average daily rate of 2,433,600 bbls.

Maximum Production

"Should it be determined by the oil industry that crude oil inventories should be liquidated to a degree comparable with that indicated, it would follow that an average daily rate of 2,450,000 bbls. might be established as the daily maximum at which domestic crude oil should be produced during any portion of the period now under consideration.

"Data are not available showing the quantity of crude oil held in or drawn from field storage in each of the producing states, as such statistical information is divided by major producing areas without regard to state boundaries. The committee, consequently, is not in a position to indicate the relative extent to which field crude oil stocks should be reduced in each of the major producing states. Having estimated the relative proportions of the domestic crude oil requirements which may be allocated to each of the major producing states, the committee believes that the decision as to the quantity which should be drawn from storage and that which should be supplied through production, is one which may best be determined by the oil industry in each of the states.

"The committee is of the opinion that many of the estimates of potential production, which have been accepted as reliable are in excess of what should be regarded as true potentials and that the formulation of more accurate estimates would be of economic benefit to the oil industry. It is suggested, therefore, that a committee of competent petroleum engineers be designated by the oil industry promptly to consider the possibility of developing a method for more uniformly estimating potential crude oil production."

OIL STATES COMMITTEE MEETING AT WASHINGTON

WASHINGTON, D. C., Apr. 7.—The Oil States Advisory Committee of which Cicero I. Murray of Oklahoma is chairman, assembled here to consider a plan of stabilization to be submitted to the Federal Oil Conservation Board Thursday.

Representatives from the 10 states follow: Oklahoma, Cicero I. Murray, Oklahoma City; Texas, R. R. Penn, Dallas; Kansas, Alfred M. Landon, Independence; Louisiana, W. Scott Heywood, Jennings; Arkansas, T. H. Barton, El Dorado; New Mexico, Van S. Metcalf, Artesia; California, William H. Cooley, Bakersfield; Wyoming, Carl M. Cox, Cheyenne; and Colorado, Warwick M. Downing, Denver. The name of the Ohio member has not been forwarded to the committee.

SAXET CONTROL BOUGHT BY MOODY-SEAGRAVES

HOUSTON, Tex., Apr. 6.—The Moody-Seagraves-Morgan interests of this city and San Antonio have acquired control of the Saxet companies, including the Saxet Oil Co. and the Saxet Gas Co., and are merging the properties with those of the Moody-Seagraves Producing Co. In the reorganization of the Saxet companies, in which the Pearson interests formerly held control, O. R. Seagraves has been elected chairman of the board; with W. F. Morgan, president. The following additional board members were named: W. L. Moody, III, G. F. Balme, S. R. Merrill, W. L. Pearson and C. E. Morrow.

Both the Moody-Seagraves interests and the Saxet companies have been important producers of both oil and gas throughout South and Southwest Texas, particularly the latter in the Corpus Christi district. Their chief producing properties are in the Refugio Field, where both have been active developers. The Saxet company within recent months opened a new field, called Saxet, west of Corpus Christi. In the salt dome district this company has production at Pierce Junction and holdings at North Dayton.

The deal was consummated through stock exchange and by a cash payment to stockholders of the Saxet companies, the total involving approximately $5,000,000. Authorized common capitalization of the company has been increased from 1,000,000 to 2,000,000 shares.

COMMISSION ASKED TO FIX PIPE LINE OUTLET

Otto Bradford, Oklahoma City field umpire, has prepared a petition asking the Oklahoma Corporation Commission to set a hearing for the pipe lines companies and other purchasers to fix their nominations and an allowable outlet for the Oklahoma City Pool.

In the past the purchasers have been making up nominations for their requirements at statewide meetings, after which recommendations for allowables were made to the commission. Some of the small purchasers are said to have complained that they were overlooked and their demands not considered.

It is expected by the time the commission holds the hearing the umpire will have sufficient wells tested for new potentials to fix approximately the total new potential of the field. Up to April 6 the total shows about a 3 per cent decline compared to the January totals. At the time the potentials were taken in January many of the wells were estimated and corrections are now being made.

The Oklahoma Corporation Commission may recommend a higher allowable for the Oklahoma City Field in view of the fact that many believe an increased demand is at hand and such a demand will continue during the summer months. The present total allowable is 125,000 bbls. a day.

UPHOLD SCHULZE PATENT ON VACUUM DISTILLATION

NEW YORK, Apr. 3.—The United States Court of Customs and Patent Appeals at Washington has upheld the validity of the Schulze patent for low-pressure distillation of mineral lubricating oils, the court's decision sustaining the Patent Office in dismissing the opposition of Archibald D. St. John and Thomas T. Gray, who advanced the claim that the inventor, John E. Schulze, had not reduced his invention to practice, as required by patent law, prior to the time when they filed their patent application.

The application by St. John and Gray was filed in 1919 and was still pending when Schulze filed his application in 1922 and received his patent in 1923. The Schulze patent covers the production of lubricating oils by distillation at pressures of not over 10, 15 and 25 millimeters of mercury, and it is extensively licensed both in the United States and abroad.

Evolution of the Schulze process dates back to the World War, the inventor, a petroleum technologist, enlisting in the Army in 1918, and being assigned to the Bureau of Standards, where he was instructed to attempt to produce high-grade lubricating fractions for use in viscosimeters. Mr. Schulze developed a 1-liter glass still for high-vacuum work which produced the required oils.

Further development on a commercial scale was found impossible, owing to the lack of funds available in the bureau, and beginning in 1918 Mr. Schulze made continuous efforts to interest oil companies in his process, finally succeeding in 1921 when a 50-bbl. unit was established at Burnham, Ill. This unit worked out successfully, and the process was then adopted for large scale production.

In pressing their case before the Court of Customs and Patent Appeals, Gray and St. John contended that Schulze had failed to reduce his invention to practice until 1921, but the Patent Office and the court both held that the small stills used by Schulze at the bureau had produced the required oil in sufficient quantities for the purpose in hand, and that the Schulze process, therefore, could properly be considered to have been used in 1918 and 1919. Both the Patent Office and the court likewise held that Schulze had exercised due diligence between 1918 and 1921 in attempting to secure commercial backing for his process, and disallowed the claims of St. John and Gray that possible difficulties to be met in adapting a laboratory method to commercial uses were sufficient to bar recognition of the use of the small stills as "reduction to practice."

FORD, BACON & DAVIS FORM A SUBSIDIARY

NEW YORK, Apr. 7.—Ford, Bacon & Davis Construction Co., Inc., has been organized under the laws of New York State as a wholly owned subsidiary of Ford, Bacon & Davis, Inc., the new unit to actively handle all construction activities of the corporation.

Edgar G. Hill, vice president and director of the parent company, heads the construction company, other officers being James F. Towers, vice president; William Vonphul, Jr., vice president, and Henry F. Storck, secretary and treasurer.

Headquarters offices of the subsidiary company are in New York with the field office in Dallas, Tex., under the direction of William Vonphul, Jr.

RAILROAD COMMISSION TEMPORARILY ENJOINED

AUSTIN, Tex. Apr. 7—A temporary injunction restraining the Texas Railroad Commission from enforcing its 90,000 barrel oil proration order on East Texas fields of Smith, Rusk and Gregg counties was granted by District Judge J. D. Moore Tuesday night on application of Carl Estes, editor of a Tyler newspaper. No date for the hearing was fixed. Estes' petition alleged the proration order was void because it was "violative of the anti-trust laws, inequitable and arbitrary and based on an unreasonable basis of market demand instead of conservation."

PLAYA DEL REY HARD HIT

NEW YORK, Apr. 7.—A dispatch from Los Angeles, Calif., to Dow, Jones & Co. says:

"More than 200 wells were shut in Monday morning in the Playa Del Rey Field because these Venice producers had no outlet for their oil. Most of these wells already are in the hands of receivers and the closing down of production increases losses already sustained in the disastrous town lot drilling venture of last year.

"The action followed withdrawal of General Petroleum Corp. of its quoted price of 56 cents per barrel for Venice crude less the 5 cents per barrel carrying charges which had been in effect for several months. When Union Oil Co. and Standard Oil Co. announced readjusted crude price schedules the announcements stated these companies would refrain for the present from quoting any price for crude they purchased in the Del Rey Field. General Petroleum's schedule announced a day later than Standard's left the price for Venice unchanged. Hence the General Petroleum withdrawal announced Thursday and effective Saturday placed that company on a parity with Standard and Union leaving the field with no quoted price for its crude."

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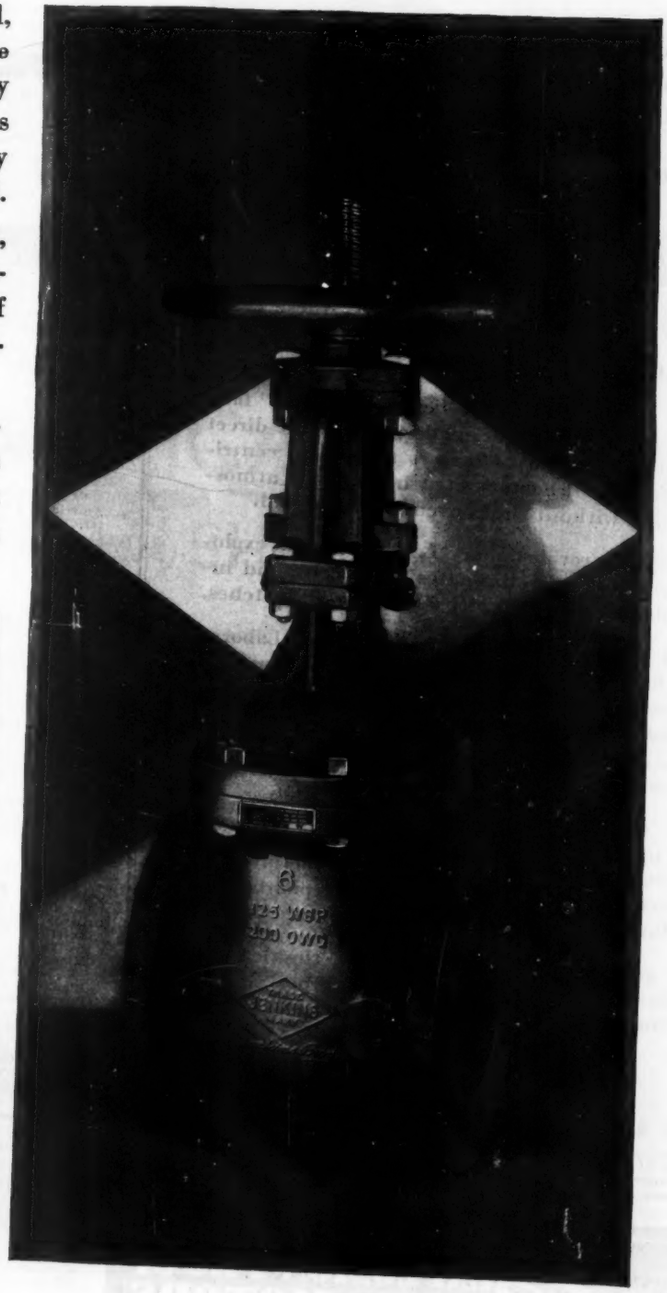

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Inside Screw, Stationary Spindle; Outside Screw & Yoke, Rising Spindle (Screwed or Flanged)	Rated Working Pressure, Pounds			
	STEAM	OIL	WATER	GAS
Standard	125	200	200	200
Medium	175	300	300	300
Extra Heavy	250	500	500	500

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**Illustrated above is facsimile of certified brass plate carried by Fig. 651, Jenkins Standard Iron Body Gate Valve, rising spindle, illustrated at right* →

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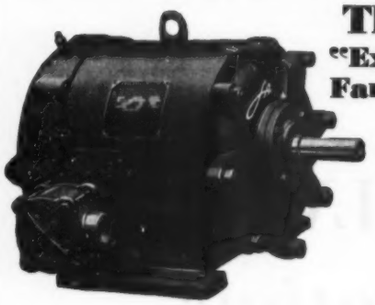


The *First*
"Explosion-Proof"
Fan-Cooled Motor

Type E
Originated in 1927
by The Louis Allis Co.

The *First*
"Explosion-Proof"
Air-Break Starter

Type E
Originated in 1930
by The Louis Allis Co.

Companion Pioneers!

Developed by Louis Allis engineers, these *companion pioneers* have brought safe individual motor drive to many hazardous industries.

It was this revolutionary "explosion-proof" fan-cooled motor that first made possible the direct connection of approved motors to pumps, centrifuges, fans, unit heaters, etc., in explosive atmospheres . . . without the conventional fire wall.

And now the revolutionary L.A. air-break "explosion-proof" starter eliminates the hazard and inconvenience associated with oil-immersed switches.

Tested and approved by Underwriters' Laboratories for Class I. Group D hazardous locations . . . these companion pioneers are inexpensive, simple, safe and easy to install wherever gasoline, naphtha, alcohol, benzol, and other equally hazardous liquids are made, used, or handled.

L.A. "explosion-proof" electrical equipment is being used all over the country in chemical plants, dry cleaning plants, oil refineries, gasoline bulk stations, terminals, natural gasoline plants, and pipe line pumping stations.

Stop *guessing* at safety! Follow the leaders! Standardize on *Louis Allis "Explosion-Proof" Motors and Starters!*

Write for complete information.

WARNING: Do not confuse Louis Allis "Explosion-Proof" motors and starters with non-approved so-called "vapor-proof" apparatus. Real "Explosion-Proof" motors and starters must pass severe explosion tests to be approved by Underwriters' Laboratories for use in Class I. Group D explosive atmospheres.

"EXPLOSION-PROOF"
Electric MOTORS
THE LOUIS ALLIS COMPANY
MILWAUKEE, WIS.

Sales Offices: Tulsa, Houston, Shreveport, St. Louis, Chicago, Detroit, Cleveland, Pittsburgh, New York, Philadelphia, Boston, Buffalo, Los Angeles, San Francisco and other principal cities.

TAPERED TUBING AS USED IN WINK, DISCUSSED AT LOCAL FIELD MEETING

By William W. Scott
Atlantic Oil Co.*

The term "tapered tubing," as we will consider it, refers to a string of tubing composed of a combination of two or more standard sizes graduating from the smallest on the bottom to the largest on top. This is not truly a tapered string for there is an abrupt change in diameter at each swage nipple, but it is the nearest practical approach to one at the present time.

Tapered tubing is used both in gas lift wells and flowing wells to accomplish the same purpose; namely, to cause the gas to more efficiently lift the fluid. In gas lift wells, it makes it possible to lift fluid with less gas. In flowing wells, it serves as a means of conserving some of the gas in the formation and at the same time allowing the well to produce its regular volume of fluid. Or in other words, lowers the gas-oil ratio. In some cases it has caused wells to flow naturally where otherwise a more costly method would have to be employed. There are wells which no combination of flow string will flow. This condition is met when the natural energy is too small to cause a gas lift condition in the fluid which the wells are capable of making.

In any flowing well there are three factors exerting pressure against the flow. They are: The pressure required to give the flow column its velocity upward, the friction of the flow column, and the density or weight of the flow column. The sum of these three is the flowing pressure of the well; that is, the back pressure on the producing formation at the point it is in contact with the well. The flowing pressure must be less than the rock pressure to an extent that the fluid and gas will pass freely into the well. Tapered tubing is a means of securing a more desirable combination of the above three factors.

These factors are related one to the other. If, on a particular well that is flowing successfully, the flow string is made smaller the flow column is given a greater velocity, causing an increase in the pressure giving it its velocity; an increase in friction, and ordinarily a decrease in density. On the other hand, if the size of the flow string is made larger, the flow column is given a less velocity, causing a decrease in the pressure giving it its velocity; a decrease in friction, and an increase in density which is caused by slippage. Slippage is fluid dropping back past the gas as it travels upward. Two high velocities, causing increase in friction, and two low velocities, causing increase in density on account of slippage, are conditions principally considered.

Entering the bottom of a flow string there is a mixture of free gas, in solution in oil, and fluid under the flowing pressure of the well. As the mixture proceeds upward, the pressure to which it is subjected decreases, the free gas expands, and the gas in solution becomes free gas, causing an increase in the volume of the mixture. Tapered tubing allows for the expansion of the gas so that it will not increase the velocity and friction excessively. It also provides for a high enough velocity at the bottom of the flow string to prevent slippage. Thereby a velocity is maintained throughout the column which will give a more uniform and efficient flow condition.

When a well [illegible] casing, it is best with tapered tubing, as with straight tubing to pack [illegible] the space between the bottom of the tubing and the casing. This prevents fluid, free from gas, from accumulating outside the tubing and later entering the flowing which either stops or reach well, before

A thorough study gained with tapered and after it has greatly in the design tubing, with findings of future

*A paper delivered at a meeting of the American Petroleum Institute, local chapter, Wink, Tex.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 37)

HARPER COUNTY

Empire's No. 1 Ruce, C NE SW Sec. 12-25-20w ..... T. D. 7,935 ft.; plugged back to 7,500 ft.; shot 30 qts. 7,270-7,300 ft.; plugged back to 5,568-82 ft.; shot 50 qts.; cleaning out.

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ..... 20,000,000 ft. gas 5,350-5,400 ft.; total depth 8,539 ft.; shut down; sprayed 50 bbls. gasoline.

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19 .... Shut down 650 ft.
Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 ..... Shut down 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-9-19 ..... Shut down 50 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Senders, NW NE NW Sec. 10-9-18e ... Shut down 2,387 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 ..... Shut down 1,645 ft.

KAY COUNTY

Wilwright Gas Co.'s No. 1 Wildegrube, NE SW Sec. 14-27-1 ..... Drlg. 3,910 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 ..... Location.
Peters & Buckles' No 1 Hayes, NW NE NW Sec. 24-28-3 ..... Fishing 3,200 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 ..... Drlg. 3,335 ft.
Blackwell Oil Co's No. 1 Harshman, Sec. 2-26-1w ..... Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w.. Drlg. 4,452 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w ..... Rig.

LATIMER COUNTY

Choctaw Gas' No. 1 Weaver, C NE NW Sec. 4-8-18 ..... Drlg. 1,710 ft.
P. English's No. 1 Unknown, NW SE Sec. 16-6-19 ..... Shut down 300 ft.
Beflore Oil Co.'s No. 1 McBee, NW cor. Sec. 3-7-21 ..... Shut down 3,601 ft.

LINCOLN COUNTY

Mote-Wheeler's No. 1 Stafford, NW NE Sec. 32-17-4 .... Bartlesville 3,905-4,040 ft.; water

McINTOSH COUNTY

J. S. Routt's No. 1 Joseph, SW SE SE Sec. 10-11-15 .... Completed 1,011-35 ft.; 4,000,0 ft. gas.

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Fishing 5,687 ft.

MUSKOGEE COUNTY

I. T. I. O.'s No. 1 Unknown, C SW NE Sec. 23-11-21 .... Spudding.
Rebold's No. 1 Miller, SE NE NE Sec. 32-13-19 ..... Rig.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 .... Shut down 1,011 ft.

OKFUSKEE COUNTY

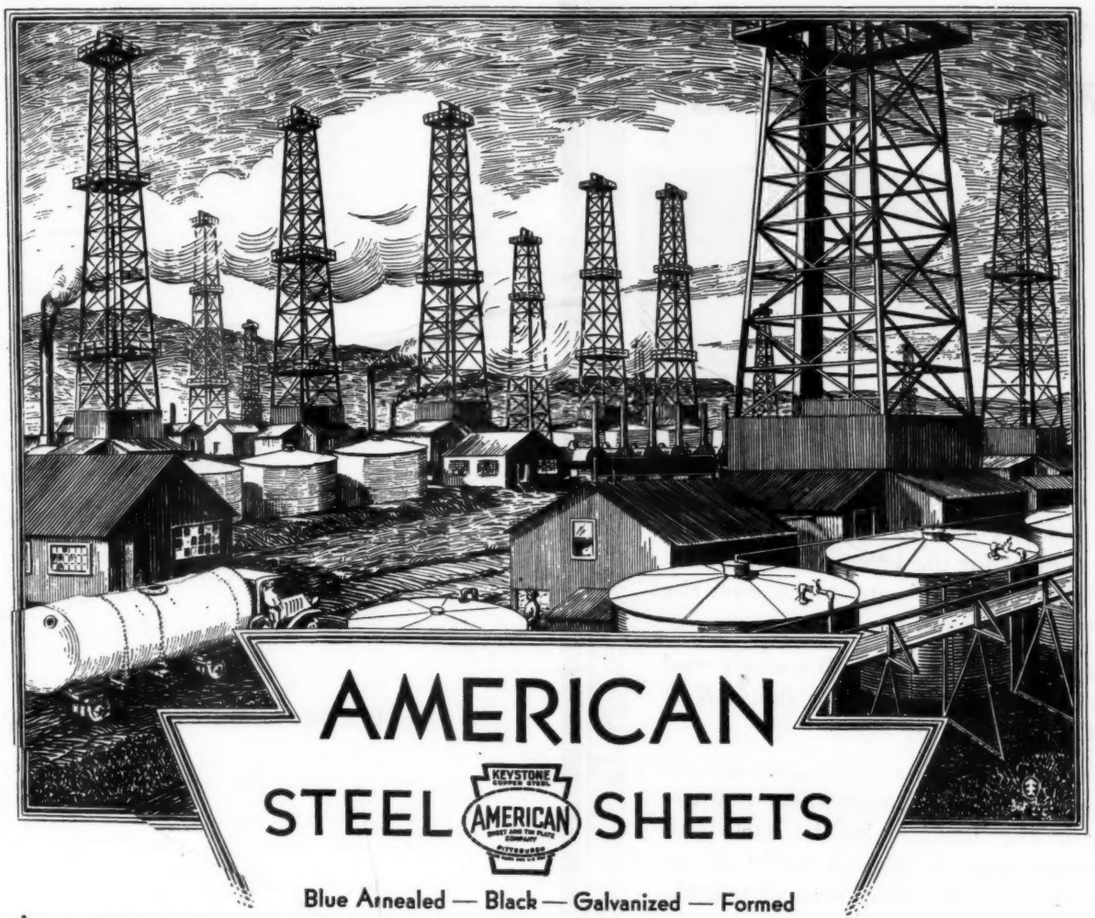
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 ..... Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 .. Shut down 3,690 ft.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w ..... Shut down 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... Shut down 5,515 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE NW SE Sec. 17-12-4w ..... Shut down 6,700 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 ..... Shut down 1,950 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 ..... Shut down 1,740 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ... Rig.



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AMERICAN products are carefully manufactured in every detail—both mechanically and metallurgically. This Company is the leading maker of high grade Sheet and Tin Mill products for all known uses to which sheet metals are adapted; also KEYSTONE Copper Steel—the original and genuine *rust-resisting copper steel alloy* for exposed sheet metal work.

USE KEYSTONE COPPER STEEL FOR

Tanks, Barrels and Drums

AND FOR ROOFING AND SIDING

Used by prominent tank, barrel and drum manufacturers. APOLLO-KEYSTONE Galvanized Sheets are specially adapted for shops, sheds, boiler and belt houses, and oil country construction. Sold by leading metal merchants. Send for ANTI-CORROSIVE booklet.

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NATIONAL TUBE COMPANY
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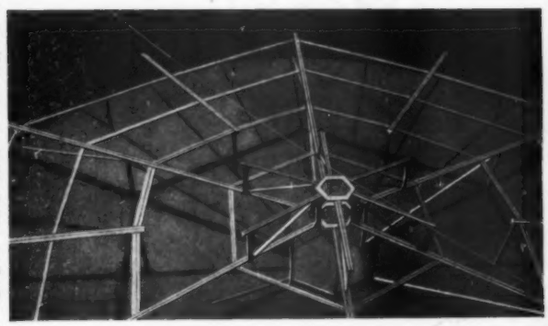
Billions of Bubbles

It Insulates While It Floats



The Industry has long admitted the safety argument for the Floating Tank Roof, and the economic argument for the Shaded Tank Roof.

Now it is being served with a single roof embodying both features — the C & B Air-Cooled Floating Roof.

This timely combination, under sun exposure, maintains a much lower temperature in the liquid under the deck than any other type of floating roof and, so, minimizes evaporation losses of volatile materials.

It's a Campbell product, and Campbell products are never put on the market till they are right.

Write or phone for Bulletin No. 10. It gives intimate details regarding the C & B Air-Cooled Floating Roof.

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CONSULTING DESIGNING CONSTRUCTING
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LONG BEACH, CAL.

STEARNS-ROGER MFG. CO., DENVER
MID-CONTINENT AGENCY

Originators of Oil-Froth Absorbers

PITTSBURG COUNTY

Vincent et al's No. 1 U. S. Coal Land, NW SE Sec. 9-5-14 ..... Shut down 100 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

POTTAWATOMIE COUNTY

Droppleman et al's No. 1 Jones, SE NW Sec. 21-8-3 .... Drlg. 1,400 ft.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w ..... Cementing cave 3,658 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w .... Fishing 2,956 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunray, NW SE Sec. 35-5-5 ..... Location.

STEPHENS COUNTY

Ross Southerd's No. 1 McKinney, NE cor. Sec. 25-1-8w .. Shut down 1,062 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w. Shut down 1,600 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 ..... Shut down 100 ft.
Petroleum Holdings, Inc.'s No. 1 Music, NW cor. Sec. 10-9-20w ..... Shut down 280 ft.

WOODWARD COUNTY

Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w ..... Shut down 7,445 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1S ..... Drlg. 4,585 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-1Se ..... Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Stewart-Howland's No. 1 Howard, NW SE NW Sec. 6-4s-11 ..... Shut down 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ..... Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10.. T. D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... Shut down 690 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e .. Shut down 485 ft.

CARTER COUNTY

Campen-Lassater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Abandoned 2,806 ft.

COTTON COUNTY

Gilbert-Lowery's No. 1 Harneg, C SE SE Sec. 4-2S-11w .. Shut down 2,300 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w ..... Location.
C. V. Chenault et al's No. 1 Grogen, SW NE SE Sec. 15-7s-6w ..... Location
Smith's No. 1 M. O. Carty, SE NW NE Sec. 18-4s-8w .... Drlg. 825 ft.

LOVE COUNTY

Batson & Sterrette's No. 1 Dillard, SE NE NW Sec. 25-6s-3 ..... Show 5 bbls. 1,585-96 ft.; T. D. 4,433 ft.; P. B. to 1,604 ft.
Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w .. Abandoned 3,130 ft.

MARSHALL COUNTY

McCrory et al's No. 1 Little, NW SW Sec. 30-7s-6 ..... Drlg. ... ft.
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 ..... Drlg. 1,662 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w ..... Shut down 1,375 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 40)

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w ..... 1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft. 6,000,000 ft. gas; at 2,133-42 ft. 3,000,000 ft. gas; showing oil 3,385 ft.; T. D. 3,441 ft.; S. D.; estimated at 600 bbls. a day.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 ..... Shut down 910 ft.

MARION COUNTY

Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 ..... Shut down 650 ft.

McPHERSON COUNTY

Henderson & Holden's No. 1 Sommerfield, NE NW Sec. 23-19-1w ..... Drlg. 2,954 ft.; showing 25 bbls. of oil and 50 bbls. of water a day; T. D. 3,227 ft.; shut down.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w ..... Fishing 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7... Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9 ... Shut down 900 ft.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w.. Drlg. 4,165 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ..... Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 .... Drlg. 1,425 ft.
Fields' No. 1 Usker, SE cor. Sec. 35-16-17 ..... Shut down 400 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Unknown, SW cor. Sec. 3-2-35w ..... Shut down 2,700 ft.

RICE COUNTY

Detrick & Langston's No. 1 Purcell, NW cor. Sec. 33-19-9w ..... Rig.
McFadden and Shell's No. 1 Jennings, SW NE NW Sec. 29-18-6w ..... T. D. 1,450 ft.; plugging back to 1,130 ft.
Cress et al's No. 1 Sharp, SE NE Sec. 13-20-10w ..... Drlg. 3,196 ft.
Allison-Fitzwilliams' No. 1 Blake, NE NW Sec. 9-18-10w.. Rig.

RENO COUNTY

Shell Continental's No. 1 Blake, SW SE SE Sec. 23-23-4w. Fishing 1,200 ft.

ROOKS COUNTY

Empire Oil & Ref. Co.'s No. 1 Halsman, SW NE SE Sec. 17-7-20w ..... Drlg. 1,925 ft.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW Sec. 17-19-16w ..... Shut down 1,570 ft.

RUSSELL COUNTY

Hall et al's No. 1 Mills, SE SW SE Sec. 30-14-13w .... Drlg. 540 ft.
Agate Oil & Gas Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w ..... Shut down 3,374 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w .... Shut down 2,814 ft.

SEDGWICK COUNTY

Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1.. Drlg. 2,070 ft.

SALINE COUNTY

Stanolind Oil & Gas Co.'s No. 1 Martin Com., NE SE SE Section 3-16-3w ..... Drlg. 305 ft.
Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w ..... Shut down 2,700 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW SW Sec. 27-7-26w.. Drlg. 875 ft.

STAFFORD COUNTY

Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE Sec. 11-24-13w ..... Rig.

STEVENS COUNTY

Sidwell et al's No. 1 Kelly, SW NE Sec. 16-34-38w ..... Rigging up standard tools 2,651

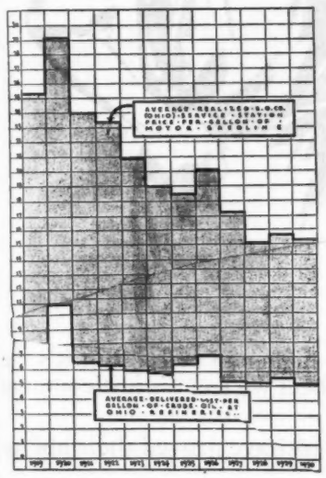
WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 .... Shut down 1,720 ft.

STANDARD STATEMENT REFLECTS CHANGES IN MARKETING TRENDS

Annual Statement—Standard Oil Co. (Ohio)*

Total dollar sales in 1930 were slightly less than in the previous year, although the total quantity of all products sold was approximately the same as in 1929. The total number of gallons of gasoline sold was just slightly less than in 1929. The decrease, however, was entirely in tank car sales, which, as pointed out, are tending to become a less important part of the company's total sales. The tank wagon and service station sales of gasoline, which constitute the largest item in the company's sales and represent the major sales activity of your company, showed an increase of about 9 per cent over 1929 as compared with an increase for the State of Ohio as a whole of only about 2½ per cent. The increase in tank wagon and service station sales of gasoline secured by your company was, in fact, equivalent to over



Comparative trend of retail gasoline and crude oil prices.

80 per cent of the total increase in consumption for the State.

Sales of Sohio Ethyl showed an increase over the previous year of slightly over 9 per cent and the sales of this premium price product as a percentage of the total tank wagon and service station sales also increased slightly over 1929. Your management feels that the high percentage of Sohio Ethyl which has been maintained is particularly notable in view of the increasing stress which many competing companies have placed on the sale of gasoline of improved antiknock qualities at the "regular" price. It is evidence, we believe, of the strong consumer acceptance which Sohio Ethyl has among Ohio motorists, and also perhaps a justification of the company's attempt to make this gasoline the best it possibly can and considerably better in antiknock quality than would be necessary merely to meet the requirements of the Ethyl Gasoline Corp.

Automotive Oils

Sales of automotive oils showed a slight decrease in 1930 from 1929. The company's premium price product, Sohio motor oil, introduced in May, 1929, however, has continued to meet with increasing success, and the sales of this product have increased materially. The sale of motor oil is, however, becoming more difficult for several reasons. One is the improvement in automobile engines and another the improvement in oil; both of which factors tend to increase the length of service which the oil gives. In the past year or so also, many competing companies have constructed inclosed lubrication facilities, which make it more and more difficult for stations which do not have them to secure oil changes. There has also been a great deal of price cutting on oil, and numerous oil dealers resort to the practice of giving oil away with the gasoline they sell. Finally, in 1930 the business depression had an adverse effect on oil sales in that many motorists chose to run their cars longer before making a complete change of oil.

By-Products

The general consumption of industrial oils and greases of course has been adversely affected by the business depression, but your company's sales in these lines have held up remarkably well in view of the conditions. New outlets for fuel oil have been developed, and the company was able to dispose of a much greater quantity of fuel oil in 1930 than in any previous year. The company began producing asphalt late in 1930. A good market is being found for this product and the company already has in prospect enough sales to take care of practically all of the asphalt which it can produce in 1931.

Advertising

It was stated in last year's report that advertising in the gasoline business cannot be expected to increase the total consumption of gasoline. This, of course, can be said of any form of gasoline sales activity which goes further than the mere adequate physical delivery of goods to the consumer. Advertising for any particular oil company must be regarded therefore as one of various sales methods and its relative value must be determined by the comparative cost per unit of the results obtained. Your management is firmly convinced that viewed in this light the company's advertising expenditure has been conservative. Much attention has been given to the details of copy and the allocation of the advertising effort among the various media. A carefully planned advertising campaign for 1931 already has been worked out, which we believe will be an effective accompaniment to the high quality products which have been developed.

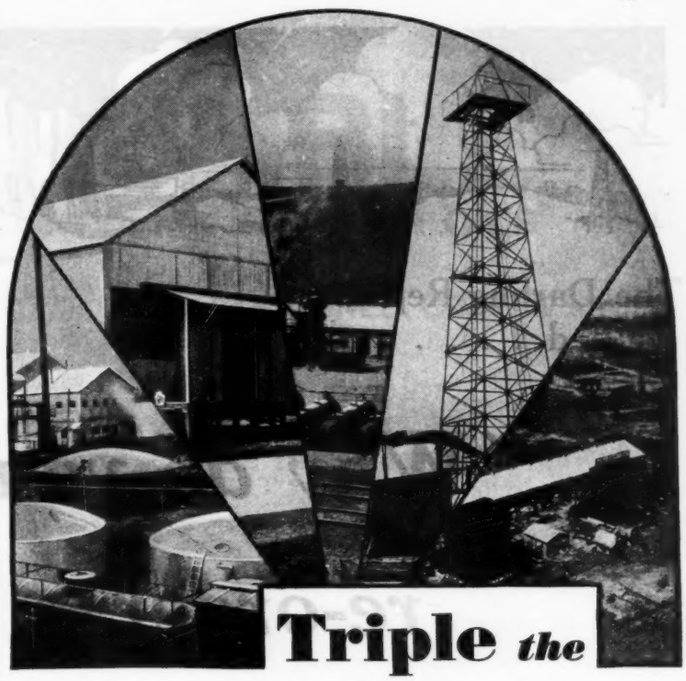
Marketing Practice

Following the policies set forth in last year's report, your management has rigidly adhered to its posted prices, no discounts whatsoever have been granted at service stations, and all tank wagon sales of gasoline to dealers and consumers have been made at posted prices clearly set forth. The management firmly believes in this policy and will continue to conform to it unless deviations from it by others make that impracticable. There has been noticeable in recent months considerable price cutting, secret discounts, and resorting to various uneconomic practices such as giving away oil or other merchandise with gasoline. Wherever these practices result in the sale of gasoline at prices materially lower than those posted by your company, it has, of course, been forced to meet such situations with a decline of its posted prices. The company attempts at all times to maintain its posted service station price in reasonable relation to the wholesale price of gasoline, for if the margin is much wider than the reasonable cost of doing business widespread price cutting will result and uneconomic distributors will be encouraged to enter the business.

It seems likely, however, that no matter how sound a price structure may be adopted there will tend to be more price cutting in the marketing end of the industry because the pressure of crude is becoming a strong force in many companies and they must try to force their gasoline onto the market. The situation probably will be aggravated also by the growing differences in the quality of gasolines marketed and the increasing awareness of those differences by the consumer.

These factors tend to complicate the marketing problem, reduce the available gross margin, and to make profits more difficult. Your company, however, is not forced to subjugate its marketing policies to the exigencies of disposing of any given crude oil supply, and it believes

*Extracts from statement.



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REDUCE depreciation costs, reduce up-keep costs and triple the life of your properties with Granite City Copper Bearing Steel. This longer-lived steel resists rust and corrosion—outlasting ordinary steel without copper content about three years to one.

Its extra cost over ordinary steel is almost negligible. And it is available in both sheets and plates for almost every building need. Pump house, booster stations, warehouses, gasoline plants, tanks and dozens of other structures become better investments when built with this better steel.

Immediate service from mill location at Granite City, Ill. —20 minutes from St. Louis, served by 29 railroads and the Mississippi River. Ask for our interesting booklet on copper bearing steel. It's free.

Tank Steel

Available in Regular or Copper Bearing Steel

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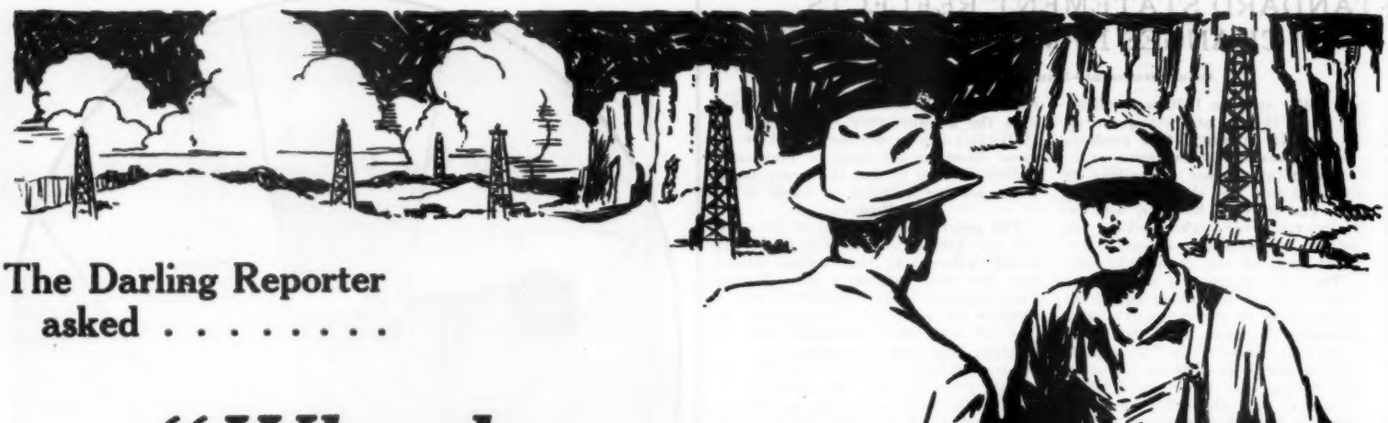
Galvanized, Blue Annealed and Black Sheets - Plates and Tin Plate



The Darling Reporter asked . . . . . .

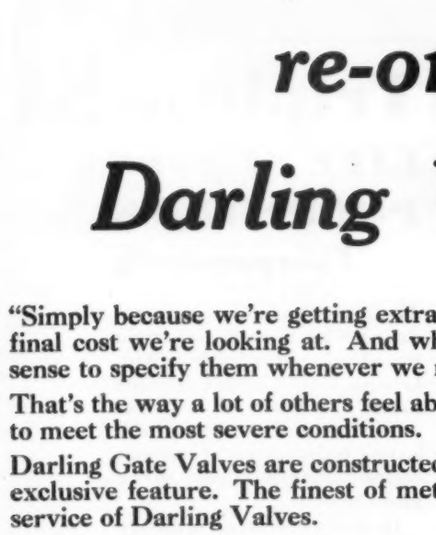
"Why do you re-order Darling Valves?"

"Simply because we're getting extra good service from them. True enough, they are a bit higher in price. But it's the final cost we're looking at. And when we check the finalcost of Darling on our balance sheet we feel it's just common sense to specify them whenever we need gate valves."

That's the way a lot of others feel about Darling Valves. Years of service on every type of job have proved their ability to meet the most severe conditions.

Darling Gate Valves are constructed on sound mechanical principles—with the revolving gate discs an outstanding and exclusive feature. The finest of metal—exacting workmanship, inspections and tests—all contribute to the long-time service of Darling Valves.

Complete information gladly sent on request.



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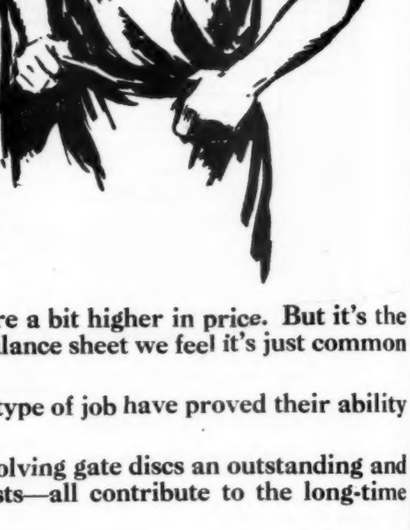

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that its proper course is to manufacture that quantity of high quality products which it can market economically and for which it can expect to secure a reasonable price.

Economic Conditions

No industry is free from difficult economic problems, but in the oil industry the economic problems are particularly important at this time. The gasoline business is relatively new, and for many years the demand for gasoline increased with almost unbelievable rapidity. It was inevitable, however, that the rate of that increase should slow down and it already has begun to do so. The increasing production of crude oil, however, gas gone on unabated—in fact, within the last two years some of the greatest fields yet discovered have been opened up. It is true that proration and other devices have kept much of the new oil in the ground; but the wells are drilled, and the physical ability thus available to bring the oil to the surface by the mere turning of valves, together with the uncertainties surrounding the legal bases on which plans for restriction and proration rest, makes that potential production the real supply factor. Meanwhile, the percentage recovery of gasoline from crude has steadily risen, so that each year a smaller quantity of crude is required to manufacture a given gallonage of gasoline.

These three factors—the slower rate of increase in gasoline consumption, the increasing potential production of crude, and the higher percentage yield of gasoline from crude—are finding expression largely in the marketing end of the business. The tremendous pressure of the crude oil seeks its outlet in the sale of gasoline and expresses itself more and more in cut prices, in an increased number of outlets with fewer gallons per outlet, and in improvements of products and service station facilities in the attempt to attract business. As a consequence, the marketing cost per gallon for the industry as a whole is increasing while the margin between cost and retail price tends to decrease.

The accompanying chart illustrates the narrowing margin between the price per gallon of crude oil and the retail price of gasoline. The top line shows the average realized price per gallon of gasoline through your company's service stations in each of the past 12 years and the lower line shows the average annual delivered cost per gallon of Mid-Continent crude oil at the company's Ohio refineries over the same period. The distance between the two lines, shown by the shaded section, measures the margin between the two prices. As may easily be seen, this margin has narrowed remarkably over the 12 years, thus indicating the relative difficulty of making profits in recent years as compared with the period say of 1919-1923, or even later. In part, the narrowing of the margin between these two prices is the result of the industry's obtaining a higher average yield of gasoline from crude, but in our own company the early use of cracking equipment (since 1914) enabled it to get high gasoline yields even a decade ago.

Under these conditions the margin between the two prices reflects a tremendous difference so far as your company is concerned. For many years this company was able to get high prices for its gasoline in relation to its cost of crude and its cost of gasoline. But today, owing to the generally increased yield of gasoline from crude and increased marketing competition, the price of gasoline in relation to crude prices has been severely reduced. During the past 12 years Mid-Continent crude oil has twice before been as low as $1 per barrel at the well. In 1921, when it first touched that level, the lowest level at which gasoline sold at wholesale in the Mid-Continent was about 11 cents per gallon in tank car lots; in 1923, when crude again reached $1 a barrel, gasoline sold at wholesale in the Mid-Continent for about 6 cents per gallon; at the end of 1930 the average well price of crude oil in the Mid-Continent was about 95 cents a barrel but the wholesale price of gasoline in the same area at that time was less than 4 cents per gallon.

A marketing profit on gasoline today must therefore be made, if at all, on a much narrower margin. As already pointed out, however, the narrowing of the margin has been accompanied by a continuous increase in the number of outlets and a resultant decrease in the gallonage per outlet for the industry as a whole. The marketing expense per gallon of course has been increased by this dilution; it has been increased further by the fact that as the competition has become keener it has become more and more necessary to improve the facilities at service stations in order to provide greater speed of service, inclosed space for lubricating work, and generally increased attractiveness.

These increasing marketing costs per gallon of the industry, however, do not necessarily discourage further expansion in the marketing field, for the pressure of crude oil creates an imperative urge to obtain marketing outlets, and as the industry becomes more and more integrated, more and more of the profits of the other divisions of the industry are being pushed over into the marketing end.

Your company, therefore, has felt that one of its most important problems has been the reduction of distribution cost per gallon. Such reduction must be made in two ways: First, by achieving and maintaining an efficiently large volume of sales per outlet, and second, by reducing expenses. As to the first method, the present management has considerably more than doubled the gallonage per service station and per truck since the first half of 1928, and we believe that your company's volume per outlet is very much above the average. The methods by which your company is attempting to keep up this gallonage per outlet are the giving of good service, the careful sales training of employes, the marketing of high quality products at economically sound prices, the use of effective advertising, and the study of all outlets from the standpoint of their profitableness.

SUMMER FIELD COURSE AT STATE UNIVERSITY

Students having at least 75 college or university semester hours of credits, including at least 8 hours of chemistry and 10 hours of physics or geology, will be eligible to entry in a summer field course in the petroleum industry offered by the school of petroleum engineering of the University of Oklahoma, Norman, Okla., to extend from June 11 to August 7.

This course is the second of a series and is under the direction of Prof. H. C. George of the university and associate professors and will include field trips to Greater Seminole area and Oklahoma City Pools as well as visits to numerous older fields. The trips are so planned the student will have opportunity to secure actual field data from all types of fields to be found in Oklahoma, and a study of drilling methods, oil well completion and methods of production, natural gasoline plants and methods of treating and refining crude oil, and methods of transportation of natural gas and crude oil.

The fee for the course is $50 to cover the salary and expense of the instructors, on the basis of not more than 20 students per instructor.

All students must bear their transportation and other expenses in visiting the oil fields and it is estimated transportation will not cost more than $50 while meals and lodgings for the eight weeks need not exceed $80.

The course is planned primarily to give students from other universities an opportunity to visit the Oklahoma oil fields and for foreign students taking petroleum engineering courses in this country. In the 1930 field course four students from abroad were registered along with many from various universities in this country.

For full particulars address H. C. George, Director, School of Petroleum Engineering, University of Oklahoma, Norman, Okla. Registration will close when 60 members have been secured and no applications will be accepted after May 20.

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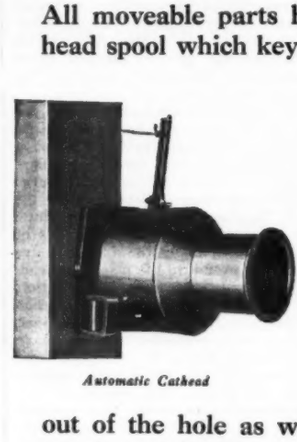

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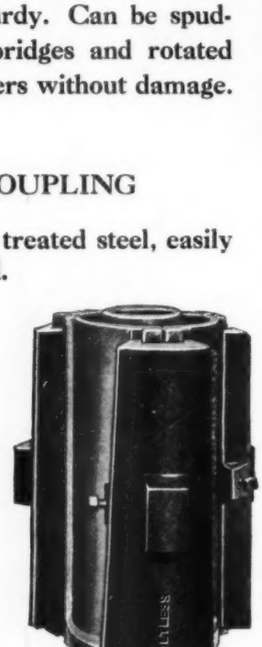

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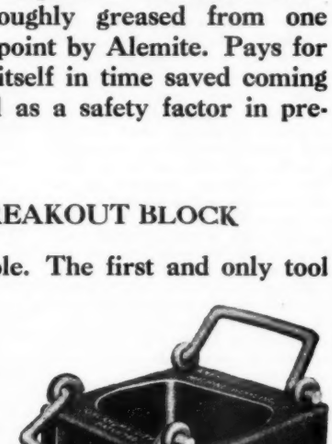

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AMERICAN PRODUCTS SOLD THROUGH LEADING SUPPLY STORES

COMPLETE RECORDS, CAREFUL STUDY OF OLD PROPERTIES PROFITABLE

By H. M. Stalcup
Vice President, Skelly Oil Co.*

This discussion will be limited to certain everyday, homely and practical problems of developing and operating oil-producing properties, which have been given entirely too little serious consideration by many of us.

It is unnecessary to stress here the critical industrial conditions existing throughout the world. Such a condition will not—indeed cannot—in such a country as ours—long continue, and we can look forward with every confidence to the inevitable return of progress and attendant prosperity. Such improvement in countrywide and worldwide economic conditions will necessarily, let us hope, be reflected in an improved state of affairs within our own industry; but let us not for a moment cling to the thought that the good old days of high priced crude and refined products are to be with us overnight. To do so in the face of the statistical facts affecting our industry is for us to indulge in the very questionable pastime of "kidding" ourselves.

A conservative dispassionate appraisal of our industry's condition can lead to but one safe conclusion, namely, that it is passing through a most important period of readjustment from which it cannot quickly and completely emerge, and those of us who are charged with the responsibility of carrying on our operations for the profitable recovery of oil must take time to read and study the signs along the way, to the end that we may all emerge from the present ordeal with stronger and more closely knit organizations attuned to the new era in the oil-producing world that we are just now entering.

There is probably no industrial activity in which the element of glamour and romance are so pronounced as in that of developing for and producing crude oil. This is becoming increasingly so as we penetrate deeper and deeper into the bowels of Mother Earth in search of the once precious liquid. With each additional foot in depth, we encounter greater natural pressures, and the thrill and urge of wrestling with the tremendous and unwieldy forces of nature proportionately increases.

This same glamour and romance, accentuated by the fact that such operations are usually carried on throughout widely scattered areas and along far-flung battle fronts with attendant inefficient lines of communication, unfortunately very readily lend themselves to that haste and loose-jointedness of action that easily makes for wasteful practices. How differently situated are those industries where the major and oftentimes sole activity is within the small confines of a securely fenced tract of land only the sore beset production man can appreciate.

Three-Alarm Method

It is apparent that notwithstanding the admitted necessity for diligence and action in protecting our properties against drainage—certainly, so long as we continue to operate under the generally existing competitive drilling conditions—there is still entirely too much frenzied haste indulged in in carrying on development work. It is axiomatic to say that "haste makes waste," but waste is inexcusable and, to say the least, expensive. There is a vast difference between an orderly, well planned and systematic development campaign, in which all necessary consideration is given to the essential requirement of dispatch, and the hit-or-miss, catch-as-catch-can, three-alarm methods, all too often indulged in by most of us producers in our eager haste to beat the offsetting neighbor to the hidden treasure. It seems to me—at least so long as the well-known condition of overproduction, with its consequent handmaiden proration, is with us, when certainly the element of drainage is greatly minimized—we shall be foolhardy indeed if we do not take advantage of this easily realized economy in our development work. Once having done so, and enjoyed the attendant benefits of so sane a policy, we shall likely be slow in getting away from it in the future.

Marked advance in practically every phase of the job of developing and operating oil properties has been registered with each passing year of the industry's history. Particularly has this been outstanding in the past few years, during which time remarkable improvements have been perfected that have made deeper and more rapid drilling easily accomplished. Better design of pumping equipment, including the prime mover, rig front, belting, tubing, sucker rod and working barrel, has all combined to increase not only the efficiency of our pumping operations, but is in turn clearly reflected in a lowered recovery cost.

Another natural outgrowth of the widely scattered and isolated feature of oil-producing operations is that of a decided tendency toward extravagance and wastefulness in the purchasing and utilization of material and equipment. There is no gainsaying the fact that there is plenty of room for a vast improvement in this respect by most of us.

Definite improvement can easily be made by our seeing to it that all field equipment, whether it be automobile, truck, tractor, boiler, gas engine, clutch, belt, sucker rod, or working barrel, be operated with discretion, gumption, and care. It is obvious that the old policy of action and results at any cost must give way to a more sane and orderly policy of field operations.

A greater appreciation of the importance of the maintenance of the gravity of oil at its highest point, and of the intrinsic worth of casinghead gas as an important revenue producer, has been responsible for the rapid progress made in the well-nigh universal utilization of individual oil and gas separators for each well, and the adoption, where suitable, of welded or riveted stock tanks, resulting in the present so-called "closed circuit" method of crude oil handling wherein the oil is never exposed to atmospheric conditions from the time it emerges from the producing formation at the well bore until it has been delivered into the pipe line serving the property.

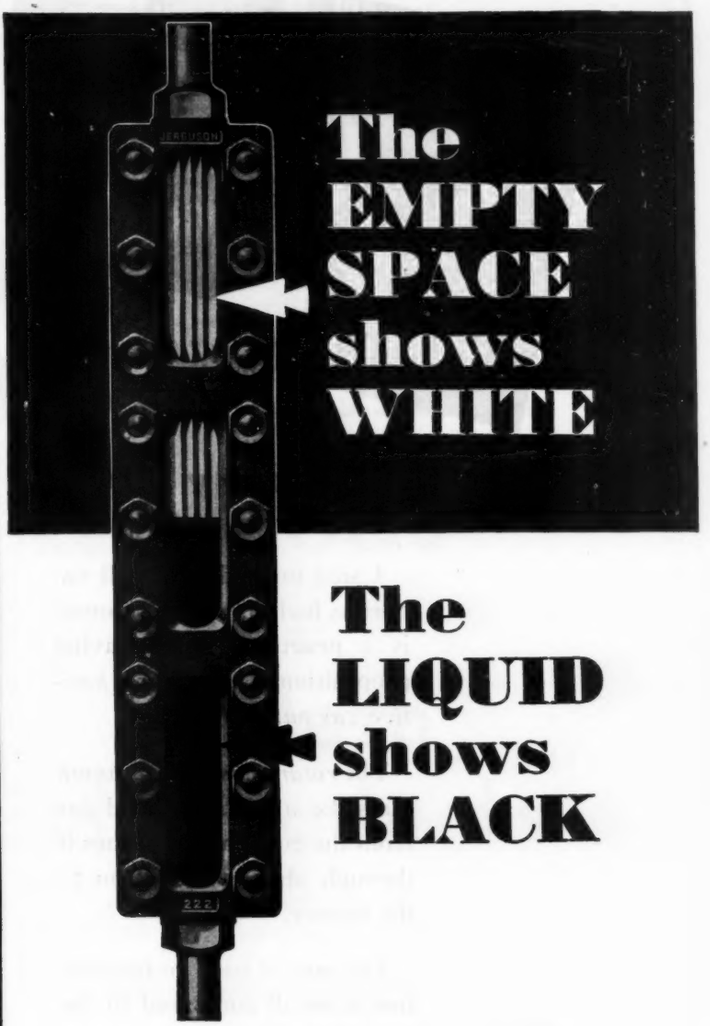
One could, without exaggeration, continue at quite some length, listing, detailing and discussing the many and varied ways in which economies and efficiencies effecting development and operating practice have been put into effect in recent years, but that is another story and rather beside the point of this discussion, for our problem now is to look only ahead, at the same time profiting by the lessons of past experience.

Our conceptions of economic practice six months ago—back in the good old days when crude oil was still worth drilling for, and when East Texas meant little to many of us other than being a piney-woods section of the country, the chief product of which was cotton and the chief worry of which was the problem of boll weevil extermination—are now inadequate, if, as seems quite apparent, we are to have altogether too much crude oil on our hands for quite a while to come, and consequently will have to struggle along on what will at least be a buyers' market crudewise for many months if not years. The writer can lay no claim to being a prophet or the son of a prophet, so his prediction of a continuing low and unsatisfactory crude market may be discounted as you will; but on one thing we can all agree, namely, that, as someone has said, the most obvious thing in connection with oil is that there is now altogether too much of it. So, then, existing conditions call for the utmost in economical methods, let the future hold what it may.

Until early in the year 1930 the oper-

*Before Mid-Continent District, A.P.I. Division of Production, Tulsa, March 27, 1931.

This gage shows in *BLACK* and *WHITE*



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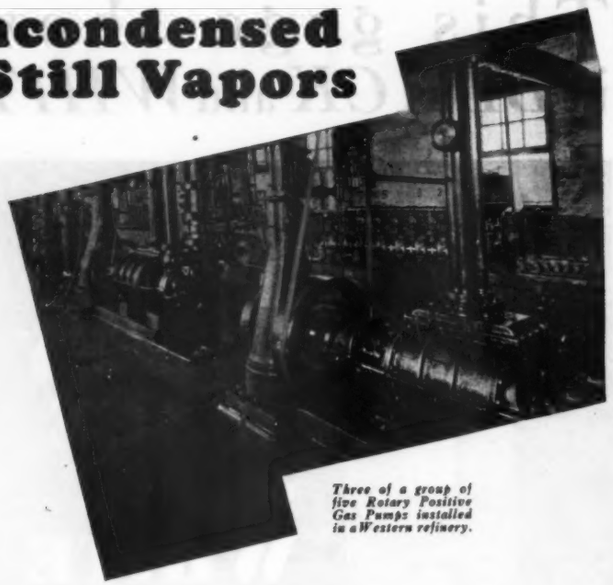

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ating records designed to control efficiency of operations and to be a check upon the various economic factors of the company with which the writer is associated were maintained on the basis of the lease as a unit. Since that time such records have been kept, to some extent, with the individual well as the unit. This change has proven to have been most fortunate and valuable, in that there has been afforded a ready and definite analysis of individual well operating expenditures and earnings, that has made it easily possible to quickly, and yet intelligently, cease the operation of unprofitable wells during the past several months, when necessity has made rigid retrenchment and cost reduction the general order of the day.

When using the entire lease as the unit in gauging the economy of our operations, we were quite apt to continue to spend money on the operation of certain wells that were excessively high in operating cost and excessively low in productive capacity, or both. It has been found that by reversing this order and carefully analyzing individual well costs, one or more wells on a given property may be shut down, resulting in the loss of but a nominal amount of oil, while at the same time effecting a substantial reduction in the operating expenditure. When the lease is used as the unit and its records disclose a substantial operating profit, we are apt to be lulled into a feeling of complacency and therefore likely to overlook the well or wells on such a lease that may be steadily and continuously losing money, and their consequent reconditioning or abandonment too long delayed.

In good times or bad, high markets or low, there is no possible justification, except where it is necessary to hold a lease, for the continuous pumping of a well, the gross revenue from which is not sufficient to cover its direct cost of operation; and nothing but an individual well cost record or analysis will definitely disclose which wells are in that category.

Keeping Well Data

While on the subject of records, too much emphasis can hardly be placed on the importance of well, operating and equipment records, as distinguished from those of a conventional accounting nature, as an aid in increasing recovery and lowering costs. Time was when entirely too little attention was given to this all-important phase of our problem, but as such problem becomes increasingly difficult, involved, and complex, the absolute necessity for data, obtainable only through the keeping of such records, is apparent.

We cannot intelligently tackle the oftimes questionable procedure of drilling deeper, or otherwise reconditioning a 10-year-old well, without the aid of an accurate and all-inclusive record of that well's initial completion and every phase of its operation to date. All too often such records will be found to be sadly lacking in one or many essentials, and we find, through the bitter and costly school of experience, conditions that, had they been known through reflection in the record, would have precluded our undertaking the job in the first place.

Unitization

One logical development occasioned by present conditions in our industry is the pronounced tendency for neighboring operators to join forces and effect mutual economies by perfecting simple operating arrangements wherein one of them operates both properties for the joint account. There is abundant opportunity for a great many more of these sensible arrangements to be perfected and their obvious saving realized.

Carrying this thought a step further, and to its logical conclusion, what is there to prevent us producers from applying one of the principles of unitization to an almost endless number of old and settled production situations by letting one of the interested producers in a group operate, not only the adjoining lease, as is now quite often being done, but a sizeable group of properties, and in the case of many small pools, the entire group of leases constituting the pool? A definite reduction in lifting costs could thus be accomplished by the elimination of a great amount of needless, if not to say senseless, supervision and overhead, as well as the perfectly obvious savings in the direct operating expenses. This is the age of co-operation, particularly in the producing branch of the oil industry, and it does appear entirely logical that we should take advantage of such obviously common sense savings.

Unitization of new and only partially developed pools is admittedly difficult, partly on account of the fact that relative values are unknown, and we have a natural fear of giving up more than we receive. This problem is not so important, however, in the case of settled or semisettled pools, and unitization of such should be relatively easy to realize; and, once having experienced the many economies of such a plan of operation, substantial progress will have been made in the general advancement of the whole theory of unitization as it applies to new development.

Exchange of Properties

One outstanding obstacle in the way of perfecting the economical operating arrangements last mentioned, as well as in the case of unitization of undeveloped or flush pools, grows out of the commendable, but probably erroneous idea we producers all have that our own producing organizations are just a little better than the other fellow's, and the consequent lack of enthusiasm registered by most of us when such plans are broached, unless we are to do the operating. A plan or policy is suggested that is worthy of thought, which will accomplish the same end, while at the same time allowing all of us to "strut our stuff" as the one and only efficient and economical oil producer. Such a plan contemplates simply the exchange of small producing properties by producers.

To illustrate: Producers "A" and "B" own adjoining leases of a settled nature in the two pools "C" and "D." Producer "A" trades his lease with three wells pumping 25 bbls. per day, offsetting or nearby producer "B's" lease in the "C" pool, to "B" for his lease in the "D" pool on which he has an approximate equivalent production. The result is that each producer still has his same approximate number of wells and the same amount of production but owns it all in one pool and on adjoining or nearby leases; and the consequent and apparent economies are so obvious as to require no elaboration. However, in addition to having improved their respective situations from the standpoint of lessened cost of a continuing nature, both operators stand to benefit additionally by reason of the fact that the economic productive life of each lease has been lengthened materially. The writer is convinced that the opportunities for us to perfect such advantageous exchanges of properties are almost limitless, and should be taken full advantage of by all of us interested in reducing our recovery costs to the minimum, while at the same time extending the productive life of our small and relatively isolated properties. This plan, while not anything like so desirable as the complete unitization of a given pool, is nevertheless a constructive step in the right direction, and will make for improved economic conditions in our small, and now rather hopeless, situations.

Gain for Proration

As a natural corollary of proration, experienced by most of us in many of our operations during the past few years, doubtless we have gained knowledge from such experiences that will prove of continuing and accumulative value in future operations. At least this is the case of the writer. The company with which he is associated has, like all others, taken great pride in the efficiency of its producing operations and no stones have been purposely left unturned in an earnest effort to reduce to the lowest possible minimum the down time of individual units. It may be heresy to now say so, and it certainly plays havoc with one of our pet operating theories, but it seems quite probable that we were actually overdoing this matter of efficiency.

Certainly, a favorable efficiency or down time record attained at any cost is not usually economic. Putting the matter another way and in somewhat clearer

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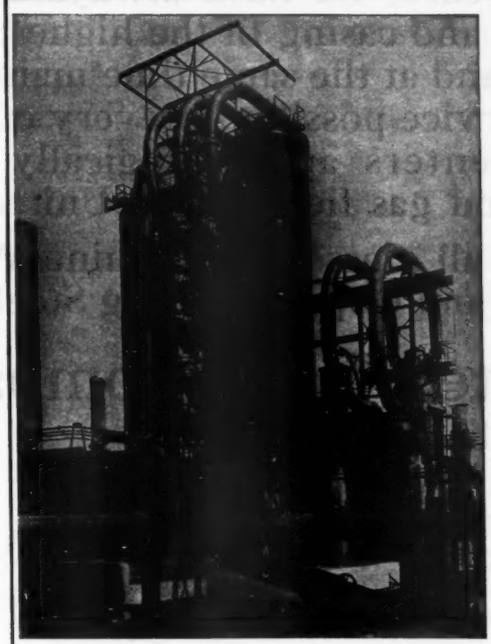

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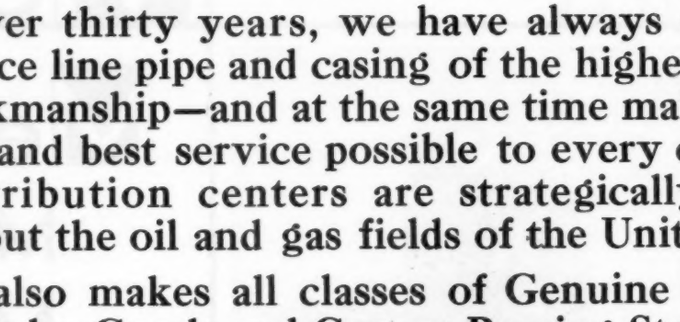

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fashion, we have definitely ascertained offsetting the loss, if any, in the volume that we may pay dearly in obtaining, or of oil obtained. Putting the matter still endeavoring to obtain, the last 10 per another way and in the language of the cent—let us say—of the productive ca-boys out on the firing line, "pouring it on pacity of a well. We have learned that 'em" and "pounding 'em on the back" in the great majority of cases the slow-doesn't pay under market price condi- ing down of the tempo of pumping on ations such as now obtain, if in fact it given well or an entire property, whether ever does. A greater appreciation of this it be forced on account of proration re- fact is just one more point that should quirements, or deliberate by reason of abe chalked up to the credit of proration voluntary and purposeful policy, results and to our experiences growing out of the in a lowering of recovery cost more than existing economic conditions.

MOUNTING STATE GASOLINE TAXES NEAR MILLION AND A HALF DAILY

The 48 states and the District of Columbia collected $73,927,712 more in gasoline taxes in 1930 than in the preceding year. Totals for the two years were for 1930, $522,110,961, and for 1929, $448,183,249. In 1928 the state motor fuel levies amounted to $318,401,556. The figures for 1930 indicate a daily income to the states from gasoline taxes of approximately $1,400,000 daily.

These totals were compiled from tax collection figures reported to the American Petroleum Institute and include net and gross collections indiscriminately, and it is expected that the final report of the United States Bureau of Public Roads, which gives net figures only, will show a slightly lower total.

Collections in the states were as follows: California realized $39,988,920 in 1930 as compared with $37,559,713 in 1929 and $33,042,095 in 1928, with the tax rate at 3 cents in each year. Ohio was second with collections in 1930 amounting to $38,802,460 as compared with $34,082,187 in 1929, when the 4-cent tax was in effect, and $24,885,700 in 1928 when the tax was 3 cents. Texas was third with $32,052,442 in 1930 and $22,180,083 in 1929, with a 4-cent tax, and $17,724,400 in 1928 with a 2-cent tax. Pennsylvania's collections in 1930 amounted to $32,006,868 as compared with $35,038,610 in 1929. In 1930 Pennsylvania collected at the 4-cent rate until July 1, and 3 cents thereafter, while in 1929 the 4-cent rate was in effect.

Collections in Illinois in 1930 were $28,611,552 as against $11,897,682 in 1929, the 3-cent rate becoming effective August 1, 1929. New York, where a 2-cent levy was introduced on May 1, 1929, collected $29,437,697 in 1930, against $19,777,075 in 1929 in an eight-month period. Michigan was the only other state to pass the $20,000,000 mark with $23,783,308 collected in 1930 and $23,558,374 in 1929, both on the 3-cent rate.

Decrease in Three States

Three states showed a decrease in revenue on same tax rate as in 1929. Alabama collected $6,901,474 in 1930 and $7,104,215 in 1929; Arkansas collected $6,292,559 in 1930 and $6,730,347 in the preceding year, and Mississippi with $6,761,980 collected in 1930 and $6,805,754 collected in 1929. However, motorists in Alabama and Mississippi actually paid more in gasoline taxes because of municipal and county levies. It is pointed out in the A.P.I. report that the collections in 1930 are twice the amount of those in 1927, three times that of 1926, four times that of 1925, seven times that of 1924, 13 times that of 1923, 40 times that of 1922, and more than 100 times that of 1921.

Throughout the country the average state gasoline tax rate is close to 4 cents a gallon, slightly more than the average current refinery price of motor fuel in Oklahoma. In some cases the levy amounts to as much as 7 cents, as in Harrison County, Mississippi, where a 2-cent "privilege" tax is assessed in addition to the 5-cent state tax.

Following is a table showing gasoline tax collections and tax rates by states in 1930, 1929 and 1928:

State—	1930	Tax rate cents per gal.	1929	Tax rate cents per gal.	1928	Tax rate cents per gal.
Alabama	$6,901,474	4	$7,104,215	4	$6,731,043	4
Arizona	2,718,613	4	2,559,831	4	2,018,200	4
Arkansas	6,292,589	5	6,730,347	5	5,959,200	5
California	39,988,920	3	37,559,713	3	33,042,095	3
Colorado	6,834,509	4	5,795,713	4	4,260,394	3
Connecticut	4,464,397	2	4,059,072	2	3,468,752	2
Delaware	1,549,622	3	977,231	3	831,180	3
District of Columbia	1,589,383	2	1,437,760	2	1,270,589	2
Florida	13,860,900	6	12,207,375	6	11,345,200	5
Georgia	13,389,672	6	10,263,711	6	8,245,487	4
Idaho	*3,003,302	4–5	2,205,085	4	2,005,800	4
Illinois	28,611,552	3	*11,897,682	3	.....	§2
Indiana	18,668,432	4	16,431,543	4	11,653,961	3
Iowa	11,792,462	3	10,068,831	3	9,199,546	3
Kansas	11,565,814	3	10,177,541	3	6,313,420	2
Kentucky	8,410,595	5	7,733,736	5	6,741,800	5
Louisiana	†7,533,599	4–5	6,925,304	4	3,380,931	2
Maine	4,344,823	4	3,834,331	4	3,289,120	4
Maryland	6,965,877	4	6,532,418	4	5,734,979	4
Massachusetts	10,740,318	2	9,888,730	2	.....	0
Michigan	23,783,308	3	23,558,374	3	20,200,050	3
Minnesota	10,359,111	3	8,898,048	3	5,768,101	2
Mississippi	6,761,980	5	6,805,754	5	*5,277,418	4–5
Missouri	8,818,513	2	7,805,384	2	7,100,013	2
Montana	4,146,605	5	3,790,745	5	2,228,155	3
Nebraska	9,137,828	4	7,861,243	4	3,968,921	2
Nevada	1,167,615	4	712,507	4	575,120	4
New Hampshire	2,596,766	4	2,332,913	4	1,929,400	4
New Jersey	‡11,373,959	2–3	9,996,104	2	8,448,241	2
New Mexico	2,733,005	5	2,421,882	5	1,839,650	5
New York	29,437,697	2	†19,777,075	2	.....	0
North Carolina	12,533,453	5	11,983,262	5	9,843,480	4
North Dakota	3,601,042	3	3,150,284	3	2,343,380	2
Ohio	38,802,460	4	34,082,187	4	24,885,700	3
Oklahoma	11,575,203	4	10,929,287	4	8,423,430	3
Oregon	6,774,473	4	4,888,885	4	4,308,417	3
Pennsylvania	§32,006,868	4–3	35,038,619	4	22,770,819	3
Rhode Island	1,792,003	2	1,571,811	2	1,317,440	2
South Carolina	7,783,773	6	6,978,419	6	5,496,913	5
South Dakota	5,514,636	4	4,930,590	4	4,426,080	4
Tennessee	10,762,234	5	9,315,636	5	5,119,740	3
Texas	32,052,442	4	22,180,083	4	†17,724,400	2–3
Utah	2,104,912	3.5	1,979,212	3.5	1,667,190	3.5
Vermont	1,880,321	4	1,703,091	4	1,119,360	3
Virginia	11,425,980	5	10,509,946	5	‡9,037,077	4.5–5
Washington	8,132,105	3	6,442,430	3	4,540,860	2
West Virginia	5,603,146	4	4,955,974	4	4,453,783	4
Wisconsin	8,757,555	2	7,867,900	2	7,142,920	2
Wyoming	1,464,605	4	1,325,435	4	953,801	3
Total	$522,110,961		$448,183,249		$318,401,556	

1928—*Mississippi tax rate raised December 1. †Texas tax rate raised September 1. ‡Virginia tax rate raised March 19. §Illinois tax law held unconstitutional February 24; January collections $885,331.

1929—*Illinois tax effective five months only from August 1. †New York tax effective eight months only from May 1.

1930—*Idaho tax rate raised March 1. †Louisiana tax rate raised November 27. ‡New Jersey tax rate raised December 1. §Pennsylvania tax rate reduced July 1.

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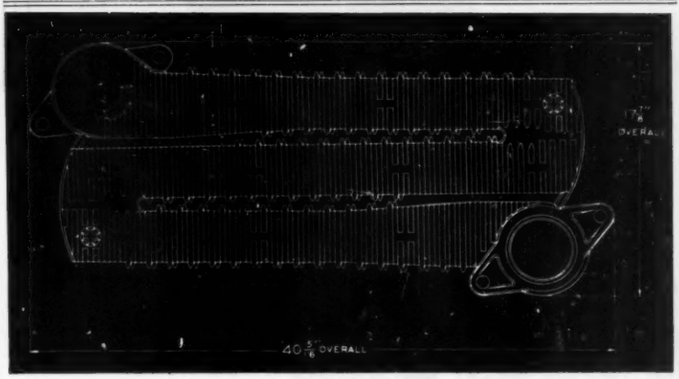

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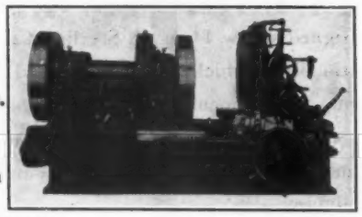

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CARE OF FIELD EQUIPMENT ESSENTIAL IF BEST SERVICE IS TO BE SECURED

By E. S. Durward
Shell Petroleum Corp., Dallas*

It is an undisputed fact that the life of any piece of equipment is dependent more upon the care given to it than on any other factor. It may seem an extraordinary statement to make but the care of equipment really begins before you buy it and that is where the field man must really start out with his schemes and programs for this important work. By this is meant that care in selection of suitable equipment for the job it has to do is necessary. Equipment of poor and cheap quality, too light or unsuitable for the work, will result in failures and high operating costs. To illustrate this: Every man who has done well pulling work can testify that if he be given a light, cheap or unsuitable set of tubing or rod elevators, then the time for each pulling job is lengthened; rods or tubing can be damaged or accidents occur, with results in loss of production and time, causing operating costs to be higher than they should be.

The first care, therefore, is to select good substantial and suitable equipment made by manufacturers of good repute. It is the cheapest in the end.

Having obtained the equipment, the next care is to use it properly—not abuse it. Cleanliness is the very first consideration and is indicative of a good careful workman. Whenever you see tools and equipment kept neatly, tidily and as clean as circumstances and conditions will allow, you will always find that they give less trouble to operate, last longer, operating expenses are not more than they should be, and, last, but the most important of all, accidents causing loss of life or injury to workers are few and far between. The clean worker is not only a good worker but a safe and economical worker.

Care No. 2 then is cleanliness in all things. Clean up tools and equipment, derrick floors, engine and belthouses after doing a job. Remember a greasy floor or tools left lying about may cost someone his life.

The next call in order of importance is upkeep. All hand tools, after being cleaned and before being put away, should always be examined. If they are worn, then spare parts should be put in or repairs made otherwise. Wrenches with worn jaws may slip off a nut and cause a serious accident or they may prevent a bolt being tightened up properly. Worn elevators may result in dropping a string of rods or tubing or in the death of a workman. There is no excuse whatever for using dangerous tools or equipment. This is a point up to the workers who use the tool and not the field superintendents, district superintendents or general managers. These men cannot possibly in most cases see that all the tools on the lease are in good order. They have to depend on their men who use them to advise when repairs or replacements are due. Rigs and machinery which is not kept up shakes itself apart, gets out of alignment, causes excessive wear and tear, heavy repair bills and unsatisfactory operation. A loose rig is responsible for much rod breakage because vibration and hammerage set up from loose equipment causes rods to become fatigued or crystallized as it is often called. A hammering gas engine connecting rod will soon end in a breakdown as the vibration it sets up loosens various bolts and fixtures. It is cheaper to shut down for half an hour and tighten up anything that has loosened up than to let it ride till a breakdown takes place; you have a big repair bill and the well is down for hours or even a day or two.

Care No. 3 then is examination and inspection of all tools and equipment to detect loose and worn parts, to tighten them up and make repairs so that everything is always in good order.

The next and last main care is proper use of tools and equipment. On this many pages could be written but at this time only major matters will be taken up.

Hand Tools

Never use tools for a purpose for which they were not intended. For instance, it is a common practice to put a piece of tubing over the handle of a chain tong to increase the leverage. This results in strained or broken tongs. These tools are designed to stand up to use with the power an average man can put into them and for a given maximum size of pipe. If they are used on pipe larger than intended for, of course the leverage provided in the handle is not enough to enable one to make up the joint. However, neither is the bearing surface of the jaws wide enough to stand the strain of an increased leverage from a piece of pipe, so while the pipe allows of the making up of the joint, it also increases risks of crushing the pipe and breaking the tongs and teeth from the overload. Use the right size pipe tongs and do not increase the leverage with pipe and your tongs will last out. In breaking out tight joints which require more power than normal, use larger size chain tongs than necessary. You will then have more leverage and a tong that can stand the strain without damage. This rule applies to all tongs, wrenches and similar tools.

Equipment and Machinery

As with hand tools, do not use it for purposes not intended or for loads it was not designed for, if you wish to have long life. To illustrate this: It was noticed by the Shell Petroleum Corp. that gas engines always broke down during pulling jobs or shortly afterward, so whenever possible tractor winches were used for pulling jobs and the gas engine trouble became very little indeed. Now the reason simply was this: When pumping the 25 or 30 horsepower engine only used from 8 to 15 horsepower, but when pulling they were raced and developed all the power they had in them. They were not used right because no internal combustion engine, be it gas, gasoline or oil, has any long life or is free from trouble if it is operated in excess of 75 per cent of its rated horsepower. So much is this known to be the case that if any of you will compare a 30 horsepower oil field gas engine made, say, five years ago and this year's modern 30 horsepower oil field gas engine, you will find the present engine not only heavier and larger in all parts but the bore and stroke are larger also. Now obviously you cannot have a larger bore and stroke without more horsepower, speed being the same. This was the makers' way of making the oil man use his engine right. He couldn't sell him the idea of having a 40 or 50 horsepower engine to stand up to a pulling job and giving the required power for the job when working at 75 to 80 per cent of its rated power, so he made a larger engine and rated it as before and could sell it. You will all admit the modern engine of a given power will stand up as its older types never did. That is because it is used right, more than for any other reason. Load the modern engine as heavily as you loaded the older engines and you are in trouble.

The writer has done it, and, while it did better than the older engine, still it gave more trouble than it should have done and finally broke down beyond repair. Moral: Use them right. The same reasoning holds good for pumping rig equipment, walking beams, hangers, cranks, pitmans, pumping jacks, sucker rods and so forth. Do not use equipment designed for a 2,000-foot hole and 2-inch tubing on a 3,000-foot hole with 3 or 4-inch tubing. It will do the job for a while but the life will be very short. Install equipment where it belongs and use it right. It is very poor economy indeed to work equipment too near its failure point. Have a good safety factor. The lubrication of machinery is very im-

*Read by E. T. Sholtus at El Dorado, Ark., A.P.I. chapter.

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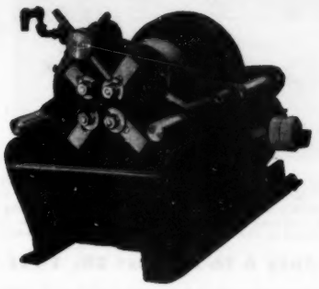

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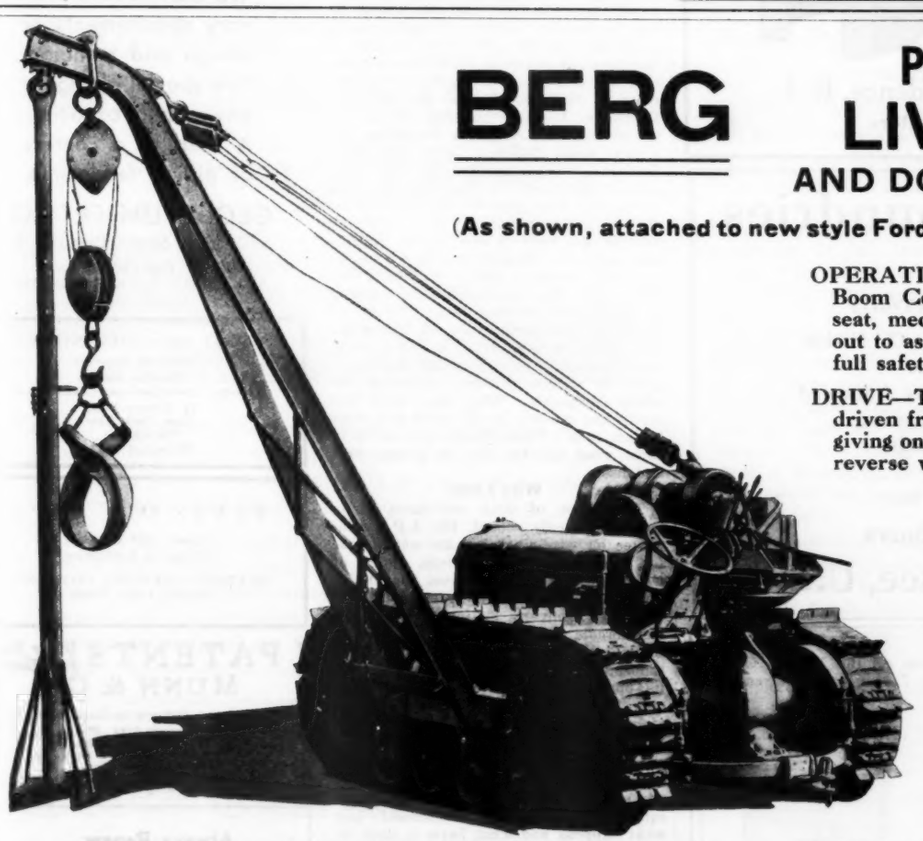

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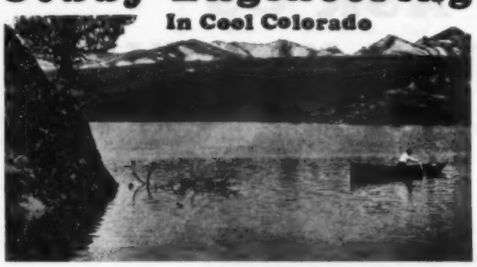

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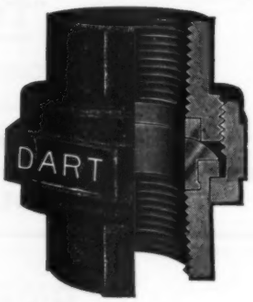

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portant. Obviously if not oiled regularly it will quickly wear out but it also can wear out too quickly if the wrong kind of oil or poor oil is used. The writer had a personal experience of this nature with his automobile. He noticed that he was using one quart of oil in the engine for every 100 to 150 miles run. He changed the brand and quality of oil, changing from a 30-cent to a 40-cent per quart oil. Since then the automobile runs 500 to 600 miles—time to change crankcase oil—without having to put any extra oil in the crankcase. The expense works out thus: Fill crankcase, six quarts, $1.80, run 600 miles and buy six quarts, $1.80, total $4.60. With the higher grade suitable oil the cost is $2.40 to fill the crankcase and no oil is added for 600 miles run. Result is a saving of $1.20 per 600 miles by using a more expensive but better and suitable oil. The above applies to all machinery and not only automobiles. Use the right oil in a gas engine and you will pay more for it but will use less than a cheap oil. There will be less carbon found, your valves will not stick, your engine life will be prolonged and repairs cut down. Proper lubrication should be used on all machinery. In engine cylinders the mechanical type is the only reliable and sure type. Nearly all modern engines are properly fitted by the manufacturers but old engines often are not. Sight feed lubrication on shafts, etc., are much used. There is a far more simple, reliable and economical type consisting of a round glass bottle with a wooden stopper having a hole through it through which passes a wire having a little clearance in the hole. The wire extends up into the bottle and down into the shaft in the bearing. The vibration of this wire causes the oil to slowly feed down into the bearing and when the machinery is idle the oil stops feeding. This type of lubrication is a great aid in giving proper lubrication care to equipment.

Sucker Rods

Seventy to 80 per cent of sucker rod breakage is indirectly due to improper handling in the field. All pin breaks except in possibly a few odd and unusual cases are due to partial unscrewing of the rods. A paper in detail covering the care of sucker rods given by E. S. Durward at Midland, Tex., at an American Petroleum Institute meeting can be obtained from the American Petroleum Institute, Kirby Building, Dallas, Tex. Suffice to say here that in one Shell company field when the bad practices and operations were strictly eliminated the sucker rod breakage in that field fell over 60 per cent in one month. Fields that had 40 to 60 pulling jobs per month are now down to three or four. One field which has excessively severe conditions now has between 20 to 25 jobs, of which 60 to 70 per cent are on four wells. The rods are overloaded in these wells and conditions are such that it is not possible to change without changing the whole equipment. This same field formerly had as many as 75 to 80 jobs from broken rods. These figures are given to show what can be done by proper care and uses.

Wire Lines

This piece of field equipment is in most cases badly abused. The A.P.I. committee on wire lines has got out a code for proper use of wire lines, copies of which may be obtained from the Dallas office of the American Petroleum Institute. One company by insisting that its men handle all wire lines as indicated in the above code saved some hundreds of thousands of dollars in one year in all its operations. They actually purchased only half the amount of line they previously bought each year for the same amount of work.

In conclusion it may be said that if a campaign of education be carried out and explanations given so that men using equipment know and understand just what happens and what harm is done by practices that have been common prevalent custom for years the improvement in operation, length of life and economy of operation so necessary nowadays will be very marked in deed.

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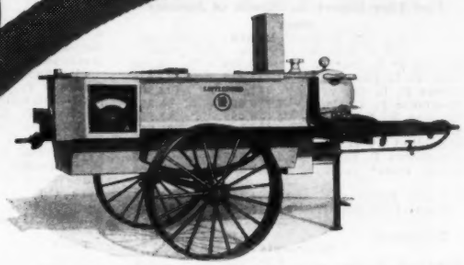

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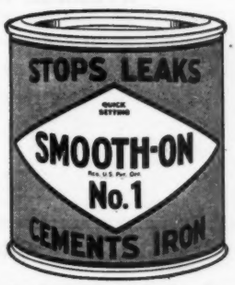

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of January

Runs

	Month bbls.	Dly. av. bbls.
Prairie P. L. Co.*	889,700	28,700
Gulf P. L. Co.	1,271,476	41,015
Texas P. L. Co.	737,838	23,801
Magnolia P. L. Co.	1,716,263	55,363
Empire P. L. Co.	3,016,090	65,035
Cosden P. L. Co.	777,611	25,084
Stanolind P. L. Co.*	2,976,000	96,000
Oklahoma P. L. Co.	2,306,285	74,396
Other lines*	5,580,000	180,000
Total January	18,271,263	589,394
Total December	18,347,639	585,635
Difference	23,624	761

Shipments

Prairie P. L. Co.	2,207,392	71,206
Gulf P. L. Co.	1,302,534	42,017
Texas P. L. Co.	864,399	27,884
Magnolia P. L. Co.	1,624,584	52,405
Empire P. L. Co.	1,846,232	59,556
Cosden P. L. Co.	808,587	26,094
Stanolind P. L. Co.	2,943,576	94,954
Oklahoma P. L. Co.	2,455,605	79,213
Other lines*	5,549,000	179,000
Total January	19,602,309	632,351
Total December	17,899,960	577,419
Difference	1,702,349	54,912

Stocks

Prairie O. & G. Co.*	35,000,000
Gulf. P. L.-Gypsy Oil Co.	7,964,315
The Texas Company	3,873,693
Magnolia Petroleum Co.	5,815,317
Empire P. L. Co.	5,470,618
Mid-Continent Pet. Corp.	3,641,294
Stanolind Crude Oil Pur. Co.*	18,277,000
Oklahoma P. L. Co.	2,594,116
Carter Oil Co.	9,780,208
Other lines*	
Total January	119,400,561
Total December	119,753,742
Difference	353,183

*Estimated. Prairie and Stanolind shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR FEBRUARY

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	127,013.27	121,907.94
S. W. Pa. P. L.	75,179.62	66,984.81
Eureka P. L.	292,615.52	271,589.18
Buckeye P. L. (Macksburg)	311,885.14	283,050.42
Buckeye P. L. (Cleveland)	11,175.80	10,192.36
Buckeye P. L. (Lima, etc.)	91,601.51	78,304.68
Indiana P. L.	3,805.02	3,595.88
Cumberland P. L.	174,361.92	158,426.03
N. Y. Transit	27,836.13	25,972.80
Tide Water P. L.	25,747.99	23,230.37
Pure Oil	220,231.74	188,721.57
Stoll Oil Ref.		25,934.10
Bradford Tran.	310,660.96	286,659.50
Total	1,672,114.62	1,544,567.64
Daily average	53,939.18	55,163.13

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	431,427.59	424,836.96
S. W. Pa. P. L.	211,121.19	249,431.73
Eureka P. L.	233,442.59	229,203.94
Buckeye P. L. (Macksburg)	257,687.49	255,836.89
Buckeye P. L. (Cleveland)	1,462.63	1,703.24
Buckeye P. L. (Lima, etc.)	1,121,462.88	1,346,381.03
Indiana P. L.	644,291.15	704,037.29
Cumberland P. L.	109,598.07	95,198.73
Southern P. L.	65,326.45	36,948.86
N. Y. Transit	174,756.42	158,600.37
Northern P. L.	230,189.95	159,788.80
Tide Water P. L.	536,454.77	454,444.14
Pure Oil	86,532.61	138,500.91
Indian Ref.	278,699.79	
Bradford Tran.	364,290.68	337,749.39
Tuscarora	489,729.45	335,137.21
Total	5,436,465.31	5,187,844.59
Daily average	175,369.85	183,494.45

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	839,235.79	823,437.33
S. W. Pa. P. L.	432,473.26	432,681.19
Eureka P. L.	1,548,201.04	1,599,276.50
Buckeye P. L. (Macksburg)	597,544.40	592,937.82
Buckeye P. L. (Cleveland)	54,263.96	38,449.28
Buckeye P. L. (Lima, etc.)	4,554,991.51	4,308,481.54
Indiana P. L.	562,567.51	546,607.27
Cumberland P. L.	623,458.27	645,138.76
Southern P. L.	265,515.03	323,636.70
N. Y. Transit	161,624.59	120,111.18
Northern P. L.	368,986.82	325,464.55
Tide Water P. L.	979,269.83	944,684.28
Pure Oil	605,621.04	649,860.39
Indian Ref.	70,080.52	
Tuscarora	14,447.96	13,749.38
Brad. Trans.	152,811.37	141,883.72
Total	11,831,092.90	11,506,489.99
Increase	79,140.49	
Decrease		324,602.91

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February, showing gross stocks of the above fields:

	Jan., 1931	Feb., 1931
Pennsylvania	3,904,310.87	3,844,013.10
Lima	800,240.43	804,771.54
Kentucky	665,271.73	655,160.44
Mid-Continent	5,863,671.90	5,564,627.27
Illinois	3,659.28	
Michigan	593,938.69	637,917.64
Total	11,831,092.90	11,506,489.99

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
January	52,904	51,749	75,907	53,939
February	57,002	51,833	79,256	55,163
March	57,485	54,252	76,668	
April	56,812	58,444	84,536	
May	62,067	59,902	80,548	
June	58,230	58,833	75,430	
July	57,144	66,087	68,921	
August	57,745	66,087	54,291	
September	53,487	67,315	56,595	
October	58,100	76,093	58,179	
November	53,865	74,831	52,232	
December	52,025	74,561	53,999	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
January	146,465	165,721	217,622	175,369
February	167,368	159,387	224,355	183,494
March	158,883	161,474	228,846	
April	172,935	169,737	241,845	
May	180,559	184,281	248,383	
June	188,024	185,404	234,401	
July	189,470	194,763	207,094	
August	192,853	194,946	205,506	
September	194,138	201,214	192,999	
October	176,000	191,267	157,675	
November	176,898	202,743	146,638	
December	173,572	186,257	143,001	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
January	7,596,564	12,220,045	11,831,092
February	8,738,835	12,991,561	11,506,489
March	9,002,058	13,247,217	
April	8,978,172	13,233,961	
May	8,903,560	13,052,953	
June	8,921,275	13,396,855	
July	9,211,595	13,268,562	
August	9,440,643	13,047,051	
September	9,443,067	12,812,918	
October	9,441,101	12,437,555	
November	9,868,538	11,851,380	
December	11,253,953	11,751,952	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	1,920,356.58
Runs from wells	406,054.17
Other receipts	107,696.79
Regular deliveries	438,310.11
Other deliveries	99,696.61

The amount of Illinois oil run by the Tide Water Pipe Co. in February was 23,230.37 bbls. Deliveries were 22,952.74 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931—	Runs	Deliveries
January	468,429.04	669,573.19
February	429,284.54	461,262.85
1930—		
January	543,387.95	498,293.92
February	548,416.33	414,536.59
March	621,944.49	469,119.52
April	530,074.22	509,304.60
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	388,464.47
August	594,642.12	375,742.43
September	457,001.11	371,691.43
October	478,442.12	320,688.73
November	422,794.68	355,403.12
December	556,418.78	363,719.58

Tide Water Pipe Co., Ltd., also delivered in February 122,174.15 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
February	7,678	.....	24,714	14,321	5,000	51,714	.....	.....	.....	.....	2,607	54,321
March	10,548	3,065	28,871	8,774	22,484	73,742	.. ..	.....	.....	.....	805	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	3,451	28,161	9,484	2,774	54,064	.....	.. ..	.....	.....	774	54,838
June	3,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	43,419	22,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,418	3,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710
September	6,300	6,400	25,600	13,400	9,567	61,267	.. ..	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516
November	3,367	6,233	33,800	17,733	4,600	70,733	.....	.....	.....	.....	4,800	75,533
December	5,516	4,323	30,645	9,678	3,580	53,742	.....	.....	.....	.....	4,645	58,387
January	3,387	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
February	24,500	14,714	147,357	36,036	39,786	262,933	2,821	11,072	3,500	1,964	19,357	281,750
March	28,355	4,839	151,806	36,645	34,903	256,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	5,933	123,500	40,433	19,434	223,700	.....	7,400	2,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871
September	38,867	8,533	150,933	34,500	25,567	258,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548
November	39,633	35,900	124,633	36,467	24,667	261,300	2,467	7,365	.. ..	1,767	11,600	272,900
December	21,419	14,033	122,774	32,839	33,774	224,839	6,290	10,613	2,097	290	19,290	244,129
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	2,097	3,097	18,903	267,774

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
February:	Month	20,885,660	17,977,624	23,314,637	2,965,704	1,608,376	1,738,250	2,027,984	3,963,000	74,481,235
	Daily average	745,916	642,058	832,669	105,918	57,442	62,080	72,428	141,536	2,660,044
March:	Month	19,699,979	19,115,406	25,502,082	3,504,395	1,817,871	1,942,938	2,337,028	4,223,000	78,143,699
	Daily average	635,483	616,626	822,679	113,045	58,641	62,675	75,388	136,161	2,520,764
April:	Month	18,768,743	19,541,310	24,799,763	3,734,253	1,724,460	1,909,552	2,334,810	4,257,000	77,069,891
	Daily average	625,625	651,377	826,659	124,475	57,482	63,652	77,827	141,900	2,568,996
May:	Month	19,044,444	20,587,503	26,219,488	3,978,385	1,659,895	1,907,482	2,565,219	4,414,000	80,376,776
	Daily average	614,337	664,113	845,786	128,335	53,545	61,543	82,749	142,387	2,592,799
June:	Month	18,020,795	19,754,700	25,643,705	3,765,060	1,704,060	1,925,621	2,519,190	4,288,000	77,621,131
	Daily average	600,693	658,490	854,790	125,502	56,802	64,187	83,973	142,933	2,587,371
July:	Month	18,802,024	18,032,514	25,973,521	3,541,409	1,713,680	2,079,769	3,275,894	3,830,000	77,248,811
	Daily average	606,517	581,694	857,856	114,239	55,280	67,089	105,674	123,548	2,491,597
August:	Month	18,770,466	17,162,034	25,069,598	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	74,955,191
	Daily average	605,499	553,614	808,696	112,630	54,842	69,391	103,011	110,226	2,417,909
September:	Month	17,984,306	16,569,120	23,111,822	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,237,108
	Daily average	599,477	552,304	770,394	113,517	52,776	66,935	107,967	113,200	2,374,570
October:	Month	18,244,953	16,632,523	23,626,553	3,571,913	1,636,552	2,142,885	3,225,560	3,627,000	72,707,029
	Daily average	588,518	536,533	762,147	115,223	52,792	69,125	104,050	117,000	2,345,388
November:	Month	18,109,459	14,941,770	22,035,222	3,459,330	1,557,870	2,136,948	2,957,100	3,222,000	68,419,699
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,656
December:	Month	17,786,728	15,067,103	21,810,359	3,432,661	1,590,951	2,157,534	3,118,663	3,328,000	68,281,999
	Daily average	573,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,202,645
1931—										
January:	Month	16,485,798	14,850,953	20,690,452	3,149,073	1,574,955	2,131,937	2,966,142	3,374,000	65,223,310
	Daily average	531,798	479,063	667,435	101,583	50,805	68,772	95,682	108,839	2,103,978
	Total 12 months	222,602,455	210,162,560	287,798,202	41,999,223	19,872,052	24,232,456	33,759,931	45,339,000	885,765,879